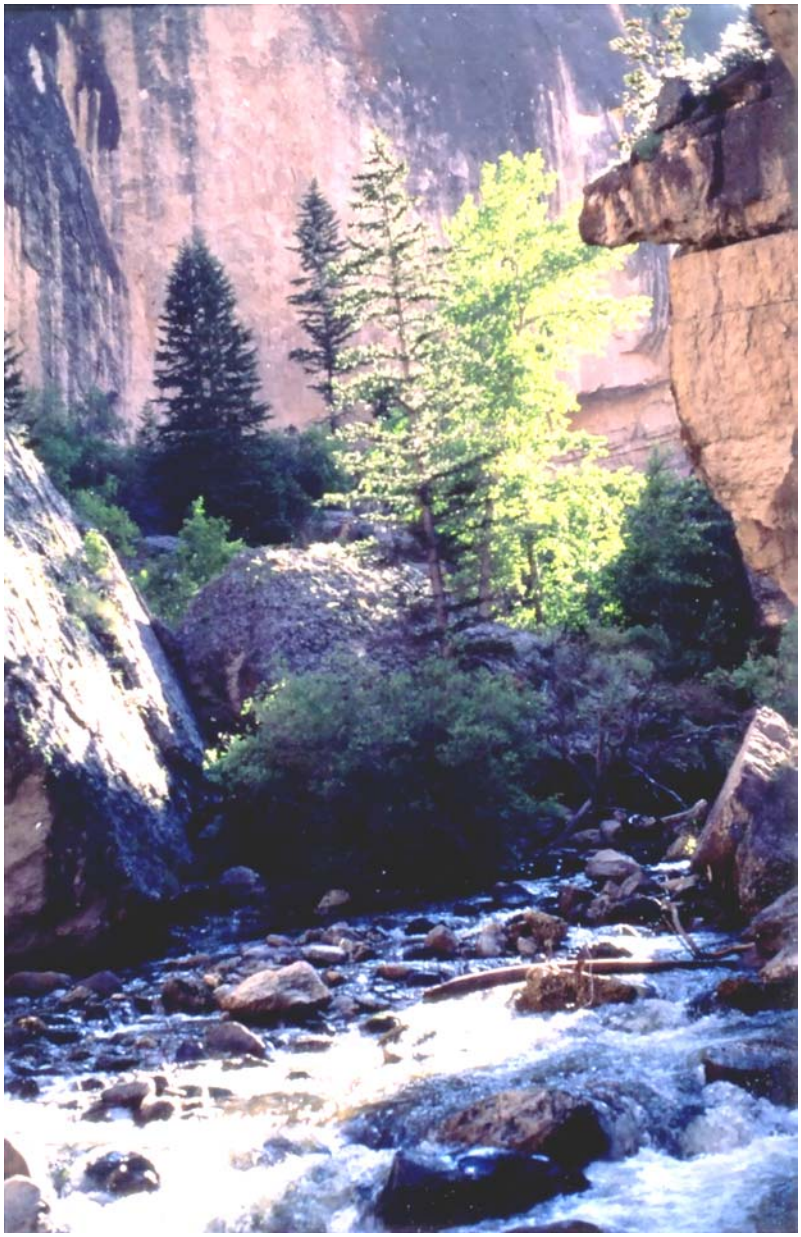
Bighorn National Forest

D R A F T

Analysis of the Management Situation

(AMS)



December 2002

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BIGHORN NATIONAL FOREST

D R A F T Analysis of the Management Situation
December 2002

Prepared by: Bighorn National Forest Plan Revision Interdisciplinary Team

Approved by: _____ _____

William T. Bass — Date

Forest Supervisor

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Chapter 1- Introduction

No region in Wyoming has a more diverse landscape; from lush grasslands to alpine meadows, and rugged mountain tops to canyon lands and desert. The Forest covers 1,115,073 acres with elevations ranging from 5,500 feet to 13,175 feet.

PURPOSE

The Bighorn National Forest Land and Resource Management Plan (Forest Plan) was approved on October 4, 1985. Since then there have been fifteen amendments to the Plan. It is now being revised as directed by the National Forest Management Act (NFMA) implementing regulations (36 CFR 219) and the Forest Service directives system (Forest Service Handbook 1909.12). The Draft Revised Forest Plan and Draft Environmental Impact Statement (DEIS) are scheduled to be completed and available for public review near the end of 2003.

The purpose of this document, the Analysis of the Management Situation (AMS), is to (36 CFR 219.12e):

- Determine the ability of the Bighorn National Forest to supply goods and services in response to society's demands; and,
- Provide a basis for formulating a broad range of reasonable alternatives.

The AMS is required to include:

- The current levels of goods and services provided, and the amount that would be provided if current direction were to continue;
- Benchmark analysis to define the range within which alternatives can be constructed;
- Projections of demand for applicable resources;
- Determination of the potential to resolve public issues and management concerns; and,
- Determine the need to establish or change management direction.

ANALYSIS COMPLETED AND REFERENCED

This AMS draws upon a number of documents, all of which are available for review at the Bighorn National Forest Supervisor's Office in Sheridan. Those that are available on the Internet are indicated below. While this AMS will address the questions listed above, it will rely heavily on the documentation and analysis in these documents.

1. AMS for the 1985 Forest Plan, completed in 1981.
2. Bighorn National Forest Plan and Final Environmental Impact Statement, 1985.
3. Fourteen Forest Plan Amendments, which are summarized in the annual monitoring reports.
4. Annual Forest Plan Monitoring Reports, 1986 through 2001. The last four reports, 1998 to 2001, are available on the web at: www.fs.fed.us/r2/bighorn/planning/monreport/forest_monitoring_reports.htm
5. Rideout, Douglas B. and Hayley Hesseln. 2000. Wyoming Timber Market Analysis: The New Western Timber Economy.
6. Existing Condition Assessments of the Economies of Big Horn, Johnson, Sheridan and Washakie Counties by David "Tex" Taylor and Roger Coupal. www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm
7. Existing Condition Assessments for the nine Geographic Areas on the Bighorn National Forest. www.fs.fed.us/r2/bighorn/planning/plan_revision/geo_assessments.htm
8. Existing Condition Assessments at the Forest-wide scale. www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm
9. Social Assessments of Big Horn, Johnson, Sheridan and Washakie Counties. www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm

FOREST PLAN REVISION TOPICS

Based upon public comments, past monitoring, and Forest Plan implementation and analysis, five topics were identified that will be used to define the differences between the alternatives. Each of these topics is discussed in more detail in the Purpose and Need which will be published in the DEIS. The AMS is organized around these topics.

1. Biological and Habitat Diversity
2. Timber Suitability and Management of Forested Lands
3. Roadless/Wilderness
4. Special Areas (Research Natural Areas and Wild/Scenic/Recreational Rivers)
5. Recreation and Travel Management

These are broad, “umbrella” topic areas. In addition, there are other issues that are important in the Forest Plan revision, but will not be used to define differences between the alternatives. That is, it is anticipated at this point in the revision process that the differences in how these resources are managed will not vary, or vary only slightly, by alternative. Livestock grazing and heritage resources are two such issues. In addition, there is a section in the AMS on the social and economic context of the Bighorn National Forest.

PUBLIC INVOLVEMENT

While public involvement specific to the Forest Plan revision began with the publication of the Notice of Intent to revise the Plan in 1999, people have been involved in the implementation and monitoring of the 1985 Plan since its inception. Range permittees have taken an active part in utilization monitoring ever since they first went onto the Bighorn Mountains in the 1880s, but particularly so recently since the self-monitoring program went into effect in 1995. Citizens recreating on the mountain have fished, hunted, driven ATVs (all terrain vehicles), hiked, done volunteer trail maintenance, and driven snowmobiles. They know how the elk react to hunting season pressure and where areas of recreation conflict occur. People in the timber industry have helped improve wildlife habitat and provided jobs and products for local communities. People have commented, provided input and appealed project-level NEPA (National Environmental Policy Act) analyses. Some people have lived in the shadow of the Big Horn Mountains all their lives and know how it has changed in the face of increasing use on the mountain. Public involvement in Forest Plan implementation is continuous, and occurs formally and informally.

Specific to the revision of the 1985 Forest Plan, one of our primary objectives is to revise the plan in an open, interactive manner, so that the landowners of the Bighorn National Forest can understand the process, have meaningful opportunities to express their opinions, hear their neighbors opinions, and have their input and information considered in a thoughtful manner. A wide variety of public interaction has occurred, including:

- Newsletters
- Public meetings
- Field trips
- Meetings with individuals and groups
- The Bighorn NF website, www.fs.fed.us/r2/bighorn/planning.htm

The State of Wyoming is a cooperating agency (40 CFR 1500-1508) for the Forest Plan revision. The cooperating agency agreement provides for coordination between state agencies and the revision interdisciplinary team. The State is sharing its cooperating agency status with the Conservation Districts and County Commissioners from Big Horn, Johnson, Sheridan and Washakie counties. These entities, along with the Bighorn National Forest leadership team, make up the revision steering committee, which provides a forum for interaction between the revision interdisciplinary team, community leaders, and the Forest

leadership. While the steering committee meetings are not a public forum, they are open to the public, in order to help people learn about the revision process and to assure a transparent process.

Forest personnel are involving the Arapaho, Shoshone, Crow and Northern Cheyenne nations in the Forest Plan revision. Federal regulatory agencies, such as the US Fish and Wildlife Service and the Environmental Protection Agency, and federal land management agencies, such as the Bureau of Land Management and National Park Service, are involved.

Chapter 2 – Major Revision Issues
Biological and Habitat Diversity

Biological and habitat diversity is evident in this photo of a riparian area.

INTRODUCTION

Biological and habitat diversity is the diversity of life in an area, and includes people, ecosystems, plant and animal communities, species, and the processes through which individual organisms interact with one another and their environments, including humans. Biological and habitat diversity is described at many levels, ranging from the molecular scale to complete ecosystems, but is most often described at the ecosection scale[1], or landscapes and watersheds in the context of Forest planning. Biological and habitat diversity should also be considered in the context of time scales.

From a total species inventory basis, it is evident that biological and habitat diversity is complex. Because of this complexity, there is no widespread agreement on how to measure biological and habitat diversity or how best to perpetuate it. Scientists agree reducing the number of species in a system also reduces biological diversity[2]. Biological and habitat diversity is perhaps best maintained by ensuring sustainability of native landscape elements and composition, biological processes, and species viability. Native landscape elements are typically characterized as those occurring prior to European

[1] USDA Forest Service. 1994. Ecological Subregions of the United States: Section Descriptions. Washington, D.C. p. 2

[2] Langner, L. and C. Flather. 1994. Biological trends in the United States. GTR-RM-244. Ft. Collins, CO.

settlement, which may not be achievable or desirable due to current public values or changes made from past conditions. Biological processes include disturbance regimes such as fire, insects, disease, flooding, predation, and other factors that influence landscapes and species dependent on them. Species viability is the key factor the Forest Service considers in providing for biological and habitat diversity. It includes providing the habitat and biological processes necessary to maintain sustainable populations of species, given disturbances that are likely to occur over time.

LAWS, POLICIES, AND DIRECTION

The primary laws that relate to biological and habitat diversity include the Multiple-Use Sustained-Yield Act of 1960, the Forest and Rangeland Renewable Resources Planning Act of 1974, the National Forest Management Act of 1976 (NFMA), the Endangered Species Act of 1973 as amended, the Clean Water Act of 1972, and the Clean Air Act of 1970, as amended in 1990. The policies that relate to biological and habitat diversity are primarily contained within federal regulations (36 CFR 219.19) that were written to guide implementation of the NFMA. Direction is also contained within Forest Service Manuals and Handbooks.

The NFMA directs National Forests to "provide for the diversity of plant and animal communities based on the suitability and capability of the specific land area in order to meet overall multiple-use objectives (16 U.S.C. 1600)." The Act further emphasized the need for multiple use and sustained yield of the products and services obtained from the Forest, including coordination to maintain watersheds, wildlife and fish, timber, wilderness, and other considerations. The 36 CFR 219.19 (1982) regulations specify, "…fish and wildlife habitat shall be managed to maintain viable populations of existing native and desired non-native vertebrate species in the planning area". The requirement to manage for viable populations was extended to native and desired non-native plant species by Department of Agriculture Regulation 9500-4. The regulations further specified that Management Indicator Species (MIS) should be used as substitutes for overall species viability to assess and monitor the effects of resource management activities. The regulations also recommend several categories of species to consider as MIS, including federally threatened and endangered species as described under the Endangered Species Act (ESA).

The Forest Service Manual and Handbooks address species viability in the 2670 sections by adding the consideration for sensitive species. Sensitive species are plant and animal species identified by a Regional Forester for which population viability is a concern. Sensitive species designation is considered a proactive approach to conserve and manage them to avoid federal listing under the ESA. Project effects upon federally threatened and endangered species and Forest Service sensitive species are considered during the planning process, both at the

Forest management Plan scale and at the individual project scale, as required by the National Environmental Policy Act (NEPA).

Currently, both the Rocky Mountain Region and the Washington Office have provided guidance documents in managing for species viability that are in addition to the above mentioned laws, policies, and direction. These processes are being followed as part of this revision as they were developed for this specific purpose.

HISTORICAL SUMMARY

With the passage of the NFMA and the 36 CFR 219 regulations, the Bighorn National Forest prepared a Land and Resource Management Plan (Forest Plan) to address multiple use and sustained yield considerations. The 1985 Forest Plan described the goals, objectives, standards, and guidelines that were to provide elements of biodiversity, both from a vegetative composition and species basis. A common practice in land management has been to identify the limiting or most rare factors on the landscape, both at the species level and biological processes level. These elements identified on the Bighorn in the 1985 plan included, among other things, the riparian resources, aspen communities, snags, grass/forb, old growth, extent of forested hiding cover, and big game winter ranges. Management indicator species (MIS) were identified to reflect most of these limiting factors. The traditional commodity outputs of timber harvest and livestock grazing were the dominant uses to be balanced with regard to the sustainability of biological resources.

While predicted harvest levels and livestock grazing have generally been reduced from the levels predicted in 1985, there has also been a strong increase in the amount of recreation use on the Forest. Most of the development of the Forest through road and trail networks or other facilities occurred primarily before the 1990's, though small levels of this type of modification continue.

Twenty-four MIS species were identified in the 1985 plan, along with direction to identify other MIS species as needed for project level effects analysis. In 2002, the Forest amended the 1985 plan to refine the MIS list based on a 2001 review of the application of the concept. The amended list includes six species that respond to the primary management activities including livestock grazing and timber harvest. The Forest also began an amendment in the 1990's to address the level of sustainable timber harvest, but the process was not completed and is now being addressed through this revision. Management activities have been conducted on the Forest to address the limiting factors described above, however not on a widespread level. Nationally, there has been widespread interest over the potentially limiting factors such as riparian, old growth conifer, fire exclusion, and individual species that have become focal points in many management activities.

With regard to threatened, endangered, and sensitive species (TES), changes have occurred since the 1985 plan. The sensitive species list was not developed until 1994, and changes have occurred in the species listed as threatened and endangered.

CURRENT CONDITIONS

The current conditions associated with biological and habitat diversity would include an assessment of the distribution and composition of vegetation communities, an assessment of physical elements such as water and geological resources, and an assessment of individual species that are considered rare. The conditions of the landscape resources were summarized in the geographic area and forest-wide assessments. This scale of analysis was commonly lacking in the initial development of Forest Plans. In addition to the geographic area assessments and forest-wide assessment prepared by the Forest, other assessments of existing conditions have been prepared by other entities or in conjunction with the Forest Service to help address landscape level planning concerns. These assessments include landscape or ecosection assessments prepared by The Nature Conservancy including the Bighorns Landscape Conservation Plan[3] and the Biological Conservation Assessment for the Utah-Wyoming Rocky Mountains Ecoregion[4], the Historic Variability for Upland Vegetation on the Bighorn National Forest[5], and the Fine Filter Analysis of the Bighorn National Forest.[6]

In general, most of the forested areas are comprised of mature forest conditions due largely to fire suppression activities, with some focused areas where road development and timber harvest occur. Old growth has been inventoried in detail in one geographic area, though a forest-wide inventory has not occurred. A summary paper on the status of habitat structure, including old growth, was prepared as part of the forest-wide assessment. Aspen has been treated in many areas to maintain age-class diversity and understory composition, however these treatments have been costly and met with the challenges of browsing by wildlife and livestock. Riparian areas have been described and some inventories conducted in support of project level livestock grazing management, with areas needing improvement identified. Where physical modifications such as roads and other facilities have impacted riparian areas over time, many of these sites have been identified and corrective measures have been taken to improve this resource. While big game winter range has not had the focus perhaps intended in the 1985 Plan, some improvements were made through prescribed burning and other treatments, though the bulk of winter range occurs off of the Forest.

[3] Humphrey, A. 2001. Bighorn Landscape Site Conservation Plan. The Nature Conservancy. Tensleep, WY. 38 pp.
[4] Noss, R., G. Wuerthner, K. Vance-Borland, C. Carroll. 2001. A Biological Conservation Assessment for the Utah-Wyoming Rocky Mountains Ecoregion. The Nature Conservancy. Corvallis, OR. 130 pp.
[5] Meyer and Knight. 2002. Draft.
[6] Welp, L., W. Fertig, G. Jones, G. Beauvais, and S. Ogle. 2000. Fire Filter Analysis of the Bighorn, Medicine Bow, and Shoshone National Forests in Wyoming. WYNDD. Laramie, WY.

Noxious weeds and other non-native species have been inventoried on the Forest. Treatments to suppress undesirable species are conducted, with large expansions not currently occurring.

With regard to individual species viability, many changes have occurred since the development of the initial plan. As mentioned above, the MIS have been reduced to a more meaningful list through a plan amendment. There are currently two threatened and endangered species for which the Forest provides habitat, the Canada lynx and the bald eagle. The Forest is in the process of examining the potential habitat and possible presence of two other species, the mountain plover and the Ute's ladies-tresses. Although the gray wolf and the grizzly bear historically occurred on the Forest, the Forest has not been identified as recovery areas for either of these species. There were a total of 29 sensitive plant and animal species identified as having the potential to occur on the Forest in the 1994 list prepared by the Regional Forester. The region is revising this list due to new species information. Inventory and monitoring has been the focus on management for rare species, with surveys conducted primarily in areas identified for project specific management activities rather than at a forest-wide scale. A general history of wildlife species on the Bighorn was prepared as part of the forest-wide assessment process.

BENCHMARK ANALYSIS

Timber harvest, livestock grazing and recreation demands are the primary benchmarks in the 1981 AMS affecting biological and habitat diversity. These levels are each described under their respective revision topic within this chapter. The benchmark of wildlife habitat was defined by the carrying capacity of winter range for big game animals. While the maintenance of this resource may not have occurred as envisioned in the 1985 plan, the big game herds associated with the habitat have grown and currently reach or exceed the population management objectives established by the Wyoming Game and Fish Department for these species. Carrying capacity for big game may have decreased on some of these sites due to a lack of treatment for maintenance of forage vigor, however little or no monitoring has been conducted to determine this. The other benchmark would have been for the provision of species viability, which was more qualitatively addressed, though predictions of habitat capability were made for MIS species. Providing for species viability is the minimum level benchmark that would need included in the revised Plan. Processes for assessing species viability have been developed by the Forest Service and will be applied to this revision effort.

DEMAND ASSESSMENT

Corresponding with population growth in the areas surrounding the Forest and nationally, the Forest has a higher demand placed upon it both for preservation of native landscapes and species. This increased demand is primarily due to

development off of the Forest, and increasing consumptive and non-consumptive uses of elements of biological and habitat diversity (e.g. fishing, wildlife viewing and hunting, scenery viewing, recreation sports, timber harvest, livestock grazing). The increased demands pose a challenge to natural resource managers to ensure sustainability is achieved.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

With increased knowledge over the past two decades about individual species needs and ecosystem maintenance processes, this revision provides an opportunity to reassess the balance of resource management considerations, allocations, and outputs. Issues and concerns identified through internal and external scoping include elements of ecosystem scale and specific species. These can be assessed in the levels of resource management allocations associated with different alternatives considered in the revision. The 1985 Plan was more focused on specific outputs and pieces of ecosystem processes, rather than a more holistic approach. There is potential to resolve this difference through the Plan revision. Furthermore, the use of Geographic Information Systems (GIS) technology provides an improved potential to resolve the issues and concerns with regard to land management allocations, both in terms of modeling predicted outcomes in vegetation patterns and in terms of assessing current configurations of vegetation communities and species occurrences. There will be a continuous increase in knowledge of species requirements and of ecosystem maintenance functions that will need to be considered in future implementation and the revised Plan, indicating the need for a more adaptive management strategy with regard to biological and habitat diversity.

Chapter 2 – Major Revision Issues
Timber Suitability and Management of Forested Lands

Aspen occurs in small patches within the coniferous forest that dominates the Bighorn National Forest.

INTRODUCTION

The Bighorn National Forest has about 728,000 acres of forested land, which is about 65% of the National Forest. Major tree species include lodgepole pine, Engelmann spruce, subalpine fir, Douglas fir, limber pine, and ponderosa pine. Unique plant and animal associations, habitats for wildlife and people, and fire ecologies are associated with each major forest cover type.

Forested lands on the Bighorn National Forest change all the time, whether or not humans interfere with the natural successional processes. Prior to Forest Service management, the primary natural change agent affecting forests in the Big Horn Mountains was fire, but blowdown and insects and diseases were also important. During the 20th century, humans have influenced the forests by increasing the amount of timber harvest and suppressing fires. These natural and human caused changes have created the forest we see today. Two of the primary questions in forest planning are to decide:

1. What kind of forest do people desire in the future?
2. What management activities (timber harvest, thinning, planting, prescribed fire, fire suppression, insect and disease control, or *nothing*) should be used to achieve those future conditions?

This section of the Analysis of the Management Situation will discuss the following:

1. The past and future role of timber harvest.
2. Historic fire influences and ecology and potential future implications.
3. A brief summary of forest insects and diseases.

A major Bighorn revision topic discussed elsewhere in the AMS is biological and habitat diversity. How the forested vegetation is managed and the resulting habitat is central to that topic.

LAWS, POLICY, AND DIRECTION

Timber management has been one of the primary missions since the origination of the National Forests, as cited in the Organic Act of 1897 (16 USC 475):

"No National Forest shall be established, except to improve and protect the Forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continous supply of timber for the use and neccessities of citizens of the United States."

The Multiple-Use-Sustained Yield Act of 1960 added other resource considerations to the National Forest mission, and codified the requirements for sustainability. The National Forest Management Act (NFMA) of 1976 (16 U.S.C. 472a) sets forth the requirements for Land and Resource Management Plans for the National Forest System. The regulations on land and resource management planning (36 CFR 219) require the identification of areas suitable and available for timber production and the allowable sale quantity (ASQ) from those lands. In addition, the regulations require the analysis of the supply and demand situation for resource commodities.

Other Related Documents

This section of the AMS is supported by several other documents, which are listed on page 1 of the AMS. Of particular importance to the timber issue is the Rideout and Hesseln report "Wyoming Timber Market Analysis: The New Western Timber Economy", which is the timber supply and demand information for Forest Plan revision.

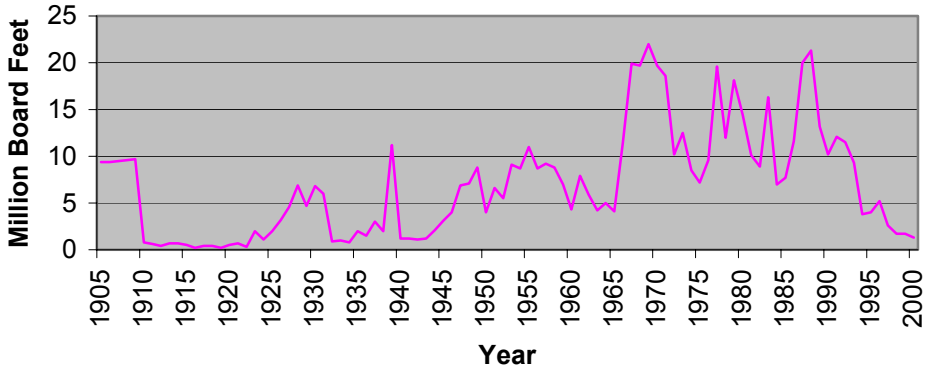
THE PAST AND FUTURE ROLE OF TIMBER HARVEST

Table 2-1 shows the historic level of timber harvest on the Bighorn National Forest from 1905 to 2000. Throughout the past century community growth was supported by timber harvest from the Bighorn National Forest. Tie hacking began in the Tongue River watershed in the early 1890s, and was important in Clear Creek for about a decade beginning in about 1925. Timber harvest increased after about 1965 when Wyoming Sawmills, Inc. opened in Sheridan, and they have been the largest purchaser since that time. Nationally, timber harvest on the National Forests has declined about 80% since the late 1980's. Locally, Bighorn National Forest timber offerings have declined from about 15 to 18 million board feet (MMBF) in the late 1980's to an average of about 2 MMBF since 1996.

Table 2-1. Sawtimber Harvest on the Bighorn NF, 1905-2000

1905 to 1991 data from Final EIS, Bighorn NF, 1994.

1992 to 2000 data from M. Eilers, R2, 5/3/01



The allowable sale quantity (ASQ) is "The quantity of timber that may be sold from the area of suitable[7] land covered by the forest plan for a time period specified in the plan." (36 CFR 219.3) In the Bighorn NF Plan, the ASQ offering is an objective. The annual ASQ for the current time period is 15.1 MMBF[8]. Since the inception of the Forest Plan, only about 35% of the planned ASQ has been offered.

The ASQ has been an issue on the Bighorn NF since 1987, when the annual Forest Plan monitoring report indicated that the ASQ and the standards and guidelines[9] were incompatible. The Bighorn began a Forest Plan amendment process to rectify this discrepancy in 1991. The process was halted in 1994 because of the level of controversy and an assumption that the full-fledged Forest Plan revision was imminent. In 1995, the Regional Forester implemented an administrative limit of 4.5 to 5 MMBF of timber offer annually from the Bighorn NF. The last sawtimber sale offered on the Bighorn, Sourdough, is currently in litigation over two issues: does the sale violate the NFMA requirements for having an ASQ and does the sale meet NFMA species viability requirements.

The ASQ is directly related to the amount of land that is designated as "suitable for timber production", hereafter referred to as suited land. The 1985 planning process included a suitability determination. In addition, the Bighorn NF conducted another suitability determination in 1991 to satisfy a US District Court order based upon a 1989 Forest Plan lawsuit. Table 2-2 summarizes the suitability analyses that have been conducted on the Bighorn National Forest.

[7] Suitability is defined at 36 CFR 219.3 as "The appropriateness of applying certain resource management practices to a particular area of land, as determined by an analysis of the economic and environmental consequences and the alternatives uses foregone." The process for determining lands suitable for timber production is at 36 CFR 219.14.

[8] Bighorn Forest Plan Errata 1, March 6, 1989.

[9] Standards and Guidelines are the direction in the Forest Plan that quantifies the acceptable limits within which management activities may occur.

Table 2-2. Summary of Suitability Analyses on Bighorn National Forest

Suitability Step	1985 Forest Plan Acres	1991 Lawsuit Acres	1994 ASQ Analysis Alternative A Acres[10]	Forest Plan Revision Acres
Total National Forest	1,107,670	1,107,671	1,107,671	1,105,015[11]
Stage I Deductions Non-forested land; non-industrial species; can't restock in 5 years; irreversible damage (soils/slope); withdrawn[12]	-681,733	-755,755	-811,035	-796,730
Tentatively Suitable Forest Land - Acres	425,937	351,916	296,636	308,285
Stage II Deductions[13]	0	0	0	?
Stage III Deductions Other multiple use objectives, logging method economics	-159,498	-89,854	-24,576	To be determined - will vary by revision alternative
Lands Suited for Timber Production	266,439	262,062	272,060	???

The Revision tentatively suitable analysis shows that there are 308,285 acres that are legally available for timber production before other management priorities and other resource limitations are applied. *This is the crux of the Forest Plan revision topic*: How many of the tentatively suited acres should be prioritized for timber production as suited land and contributing to the ASQ as opposed to prioritized for other resource objectives?

Silvicultural treatments, including timber harvest, are allowed when treating other than suited forested lands to achieve other resource objectives. The timber yield and harvest intensity on "unsuited lands" may be lower than it would otherwise be on suited lands, depending on the resource objectives, and the volume does not always count towards the ASQ.

Examining past ASQ analyses can provide an approximation of the range of potential timber outputs that may be expected during revision. Table 3 summarizes the analyses conducted recently. Application of the information in this table needs to be done with caution. For example, alternatives considered in the 1994 ASQ amendment process[4] emphasized selection harvest systems, which may or may not be the predominant harvest system considered in revision. It is important to note that the ASQ can vary on the same land base due to different standards and guidelines and how much mitigation cost is paid to ameliorate resource effects.

[10] The ASQ analysis was part of an Environmental Impact Statement for which the analysis was completed, but it was never subject to a NEPA decision and was never implemented.

[11] There are a variety of reasons for acreage differences between the different analyses. A complete explanation for the differences is in a document filed at: …plan_revision\219-26_Suited_Uses\Timber\ GISTentativelySuitable.doc. Use of GIS technology and use of the most up-to-date vegetation and soil databases (Bighorn Common Vegetation Unit and Common Land Unit) account for most of the differences.

[12] Withdrawn includes the Cloud Peak Wilderness, and the Bull Elk and Shell Research Natural Areas

[13] Analysis of benefits and costs of timber production, all lands passed on to Stage III.

Table 2-3. Recent Analyses Comparing Suited Acres to ASQ

Analysis	Suited Acres	ASQ MMBF	Comments
1975 Timber Management Plan	389,000	38.4	This was based on potential yield at that time, and this level was never offered.
1985 Forest Plan AMS			Benchmark analysis indicated the range of timber outputs could be from 0 to 49 MMBF. The AMS cited that the Regional target for the Bighorn NF between 1983 and 2030 would be 25 MMBF annually.
1985 Forest Plan Selected Alternative	266,439	15.3 (1985)	By 1987, monitoring reports indicated this output was incompatible with the standards and guidelines.
1985 Forest Plan – Other Alternatives	Ranged from 175,000 to 303,540	Ranged from 10 to 25	
1994 ASQ Analysis – Alternative A	236,993	4.4	This alternative kept the 1985 Forest Plan Standards and Guidelines, and lowered the ASQ to fit them.
1994 ASQ Analysis – Alternative B	247,146	14.95	This alternative kept the 1985 Forest Plan ASQ, and lowered Standards and Guidelines to fit it. Required departure from non-declining even flow.[14]
1994 ASQ Analysis – Alternative C	224,521	10.7	Modify Standards and Guidelines to achieve an ASQ of about 11 MMBF. This alternative had the worst financial return[15] of all alternatives, because of resource mitigation costs and extensive use of uneven-aged management.
1994 ASQ Analysis – Alternative D	96,074	1.05	Emphasize closing the gap between revenues and costs of the timber program, while retaining most Forest Plan Standards and Guidelines.
1994 ASQ Analysis – Alternative E	207,739	5.9	Change Standards and Guidelines to emphasize biological diversity and application of ecosystem management. Incorporate the sustainable aspects of the Multiple Use Sustained Yield Act.

HISTORIC FIRE INFLUENCES AND ECOLOGY AND POTENTIAL FUTURE IMPLICATIONS

Fire was the most important influence on forests on the Big Horn Mountains prior to the arrival of European man around 1880. The Organic Act passage "…to improve and protect the Forest…" was generally interpreted as practice fire suppression. The 1985

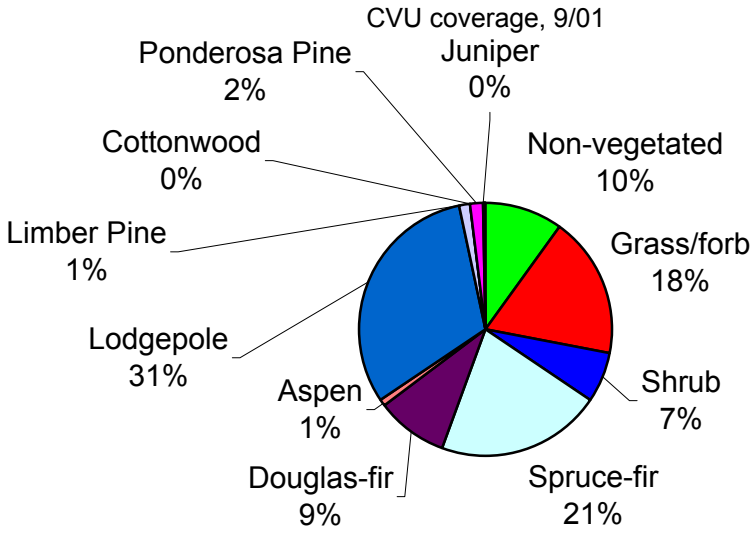
[14] Departure means that the level of timber harvest proposed for the first decade (14.95 MMBF) could not be maintained through future decades.

[15] Financial return is from the perspective of the US government, that is, costs and benefits to the US Forest Service.

Forest Plan recognized the use of prescribed fire. However, fire and fuels management practices and knowledge has changed considerably in the past few years, and the current plan is out of date concerning this topic.

The Bighorn National Forest has a variety of vegetation cover types, as shown in Table 2-4.

Table 2-4. Cover Types - Bighorn National Forest



The forest species in the Big Horn mountains occur in different climatic regimes and on different soil substrates, and these influences, interacting with individual species' characteristics, create a different fire regime. Table 2-5 summarizes two of the fire regimes on the Bighorn National Forest, and shows how a century of fire suppression has affected the sustainability of the ecosystem.

Table 2-5. Ponderosa and Subalpine Forests Fire Regime Summary

Species	Fire Return Interval	Type of Fire Event	Effect of Fire Suppression	Ecological Risk to Sustainability
Ponderosa Pine (2% of Bighorn NF)	Short, 25 to 50 years in Big Horns	Generally surface fire, occasionally into crowns	Missed 2 to 4 fire intervals; increase in number of stems per acre; decrease in tree size; current drought and density stress result in increased mountain pine beetle activity.	Great – A fire now would be uncharacteristically intense. It would be a stand replacing event, difficult to regenerate, likely increased risk to watershed health.
Subalpine Forests – Lodgepole Pine/ Engelmann Spruce/ Subalpine Fir (52% of Bighorn NF)	Long, 100 to 500 years in Big Horns	Generally stand replacing. Most area affected by a few, very large (100s to 1000s of acres) fires.	Approaching first interval. Many of the driest, shortest interval areas in this regime burned in the late 1800's (Piney/Rock, Goose, West Tensleep, parts of Tongue).	Low – the size and type of stand replacing fire that would occur in this regime would be the same as has occurred for millennia. Lodgepole adaptation to this regime of serotinous cones leads to prolific regeneration, watershed health related to "pulse" sedimentation/runoff events.

Table 2-6 shows the number of acres burned annually on the Bighorn NF between 1909 and 1997. The table illustrates that most of the acreage burned on the forest occurs during a few years when weather and fuel conditions are ripe. This is typical of a long interval, stand-replacing fire regime. Some of the large fire events evident in the table include Black Mountain (1916); 1919, which was a severe fire year across the west; Crow Reservation (1921); Duck Creek (1943); Pumpkin Creek (1970); Lost and Gold Mine (1988); and, Stockwell, West Pass and Bull Elk (1996)

Table 2-6. Acres Burned Annually
Bighorn National Forest 1910-1997

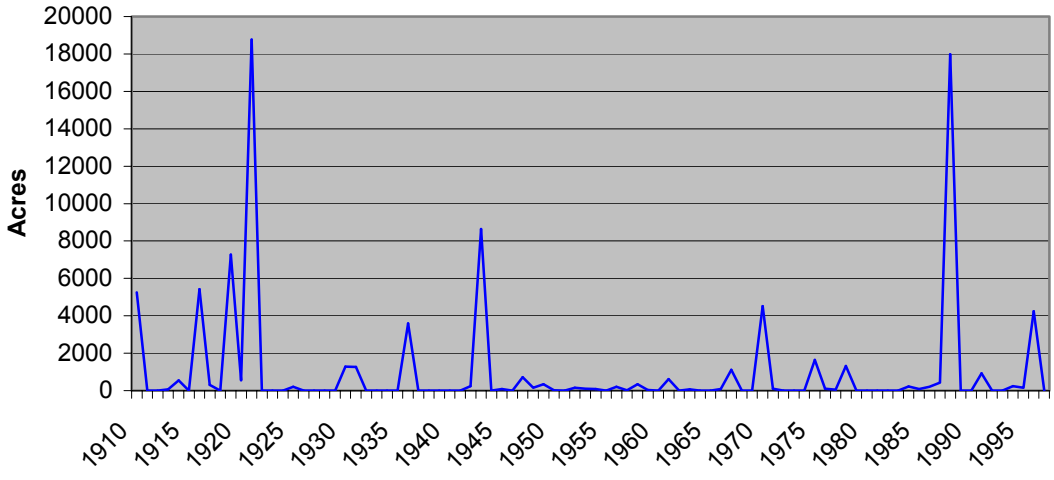


Table 2-7 illustrates the fact that while most fires that occur on the Bighorn National Forest are small (less than 100 acres), the greatest portion of the landscape is affected by a few large fires.

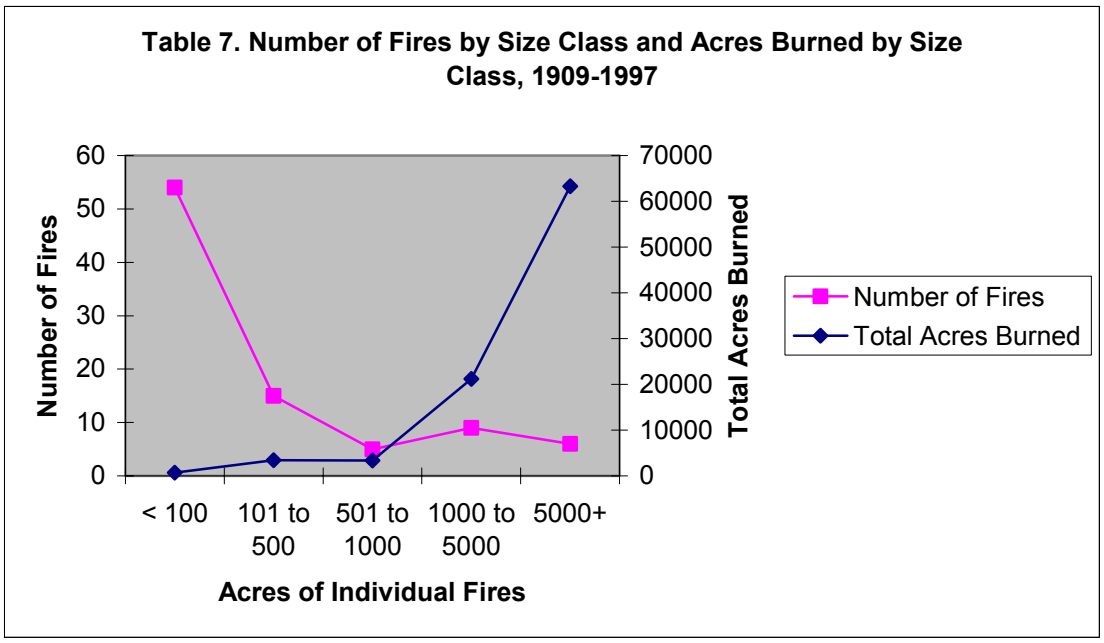


Table 2-8 shows the average annual number of fires by ignition source between 1909 and 1997 on the Bighorn. This is an unusually high percentage of human caused fires compared to other National Forests in western states.

Table 2-8. Average Annual Number of Large Fires on the Bighorn NF, 1909-1997

Total Number	14.8
Human Caused	8.2
Natural Cause	6.6

The 1985 Forest Plan has very little direction on fire and fuels treatments, and most of that deals with cost efficiency. In addition, the entire Bighorn NF is under a suppression strategy for wildfire. A series of severe fire years beginning in 1988 and continuing to 2002, coupled with increased scientific knowledge and understanding of the role and management of fires, has pointed out the need to include updated fire direction in the Forest Plan revision. Among the considerations likely to be addressed are:

- Wildland Fire Use – This is the practice of allowing naturally ignited fires to burn under a strictly defined prescription in certain areas of the Forest. For example, natural ignitions in the Wilderness could be used to maintain the role fire historically played in that ecosystem. The primary revision question raised by this topic would be where wildland fire use would be an appropriate management response.
- Fuels Treatments – The revised plan, through management area direction, standards and guidelines, and desired conditions, will prioritize areas eligible for fuels treatments and specify which fuels management "tools" are available on specific areas of the National Forest.

- Suppression strategies – Currently the Forest Plan provides no direction on which strategies (control, confine/contain, or monitor) and which suppression tools (mechanical, aerial retardant) are appropriate management responses.
- Fire's ecological role – The 1985 Forest Plan has little, if any, recognition of the role that fire plays in ecosystem processes, biological and habitat diversity creation, insect and disease cycles or watershed function and health.

Silvicultural treatments, including timber harvest and thinning, and fire are the primary tools available in setting the forested vegetation on a trajectory that will achieve the desired condition that will be defined in the Revised Forest Plan.

Blowdown from Wind Throw

Strong wind events are not uncommon in the Big Horn Mountains. These events at times cause extensive swaths of trees to be blown over. Recent blowdowns have occurred in Shell Canyon, along US 14 through the Tie Flume campground, near Dayton Gulch and Bald Mountain, and Battle Park. These events are often followed by increased bark beetle activity and stand replacing wildfire.

The Forest Plan revision will decide where, how and if these areas will be treated. This is defined in the management area direction and standards and guidelines

Forest Insects and Diseases

After fire, insects and diseases were the primary forest change agent in the Bighorn National Forest prior to the arrival of Europeans. The primary revision question surrounding insects and diseases is when and where management or control is an appropriate strategy. This will be largely defined in the management area desired condition section and in the standards and guidelines.

Just as the role of fire has been revisited in the past decade, so has the role of insects and diseases. In fact, the whole concept of what constitutes a "healthy forest" has been revisited. In the past, insects and diseases were considered "pests" to a "healthy" forest, and the general rule was to manage against them, or to at least keep them at endemic levels. More recently, scientists have gained a greater understanding in the larger ecological role insects and diseases play in nutrient recycling and decomposition processes; in their interaction with the natural fire cycle; and, in the creation of wildlife habitat. The most current thinking on management of forests is that what constitutes a healthy forest must be defined in terms of the management objectives for an area. For example, more than very small amounts of insects and diseases are not compatible with an area managed for wood products and developed recreation. In contrast is an area managed for wild recreational experiences and natural ecological processes; natural levels of insects and diseases, which may occasionally reach "epidemic" levels of certain species, may be desirable. The Forest Plan revision will define what insect and disease species at what levels are appropriate in the management area desired condition, and will define what management strategies and tools are appropriate in the standards and guidelines.

Table 2-9. Status of some of the more important forest insects and diseases on the Bighorn National Forest.

Species	Native/ Non-Native	Discussion	Acres Affected in 2001
Mountain Pine Beetle	Native	Leading cause of insect mortality in the Western U.S. Attacks lodgepole, ponderosa and limber pine. Active along the eastern Big Horn mountains from US 14 at Sand Turn to Story, US 16 in Tensleep Canyon, Shell Canyon and elsewhere. In ponderosa, increased stem density due to fire suppression is main contributor to population increases.	Lodgepole: 20 Ponderosa: 108b
Spruce Beetle	Native	Reproduces in downed trees and large pieces of slash. Epidemic potential on green trees usually associated with blowdown events. Activity near 1993 and 1997 blowdowns is just now reaching levels initially predicted.	305
Douglas-fir beetle	Native	Usually at low densities, although currently near epidemic levels in Shell and Tensleep canyons after drought years.	7
Western Spruce Budworm	Native	Main hosts are Douglas-fir and subalpine fir, less important on spruce. Mortality usually restricted to understory trees.	Not listed
Subalpine fir decline	Native	Interaction of western balsam bark beetle and *armillaria* root disease causing mortality of subalpine fir throughout Rocky Mountains, but Forest Health specialist Kurt Allen states that Bighorn NF has the highest incidence in the Rockies. Usually kills small 5-15 tree patch. 2001 acreage affected is down from 33,605 acres affected in 2000 survey.	3944
White Pine Blister Rust	Non-native	Affects limber pine on Bighorn. Fungus that utilizes *Ribes* sp. (gooseberry/currant) as alternate life cycle host. Heavy infestation in Tensleep Shell Canyons and along eastern edge, but occurs throughout forest. This non-native disease is considered the greatest threat to ecosystem function on the Bighorn because there is no treatment, despite decades of research, and because of its history of decimating entire populations, such as western white pine in Idaho.	150
Comandra Blister Rust	Native	Fungus that occurs on lodgepole pine throughout the Bighorn NF. Alternate host is *Comandra umbellata*, bastard toadflax. Top-kill, “spike top”, is the typical manifestation of this disease, although may be an agent in mortality after several decades.	NA
Western Gall Rust	Native	Fungus that occurs on lodgepole and ponderosa pine throughout the Bighorn NF. No alternate host is known. Trunk cankers affect form, lumber content, growth rate and weakens bole for wind damage. May kill individual trees but known for to wipe out entire stands.	NA
Dwarf Mistletoe	Native	Parasitic plant with several species that attack different trees on the Bighorn, but the most important is on lodgepole. “Witches’ brooms” are the outwardly visible effect. Effects tree growth rates and quality of timber product; can eventually cause mortality through girdling.	NA

DEMAND ASSESSMENT

"Wyoming Timber Market Analysis: The New Western Timber Economy", by Douglas Rideout and Hayley Hesseln, is the timber supply and demand information for Forest Plan revision. The findings of the Analysis have potentially significant implications for public policy, public timber programs and for the timber industry. A new timber economy is emerging in the State of Wyoming that has been shaped by a series of significant changes. The shape and nature of the new economy is unmistakable and markedly different from the past. The key factors shaping the new economy, characteristics of the new economy and some potential implications are outlined below.

Factors Shaping the New Economy

- International Events: are affecting the Wyoming timber economy as never before. Recent events include increasing Canadian lumber imports, a strong US dollar, a series of international monetary crises that occurred in the 90s with current revival. Further, the US Canadian Softwood Lumber Agreement will expire April, 2001 with the potential to pressure lumber downward. Recovering Asian economies are expected to increase US lumber exports.
- Domestic Events: include the reduction in public timber harvesting reflecting environmental/amenity restrictions and pressures, increased offerings of small diameter volume, increased offerings of private timber, higher and more volatile lumber prices, green certification. While international markets are expected to rebound, domestic demand is expected to slow as a consequence of higher interest rates

The Emerging Wyoming Timber Economy

- Industry Consolidation: The key and unmistakable trend resulting from the factors shaping the new economy is industry consolidation. Understanding the nature of the consolidation is, however, the key to understanding the new economy. Small diameter volumes require more capital investment to harvest and process in an economically efficient way. With unreliable volumes from any particular national forest and high lumber prices, the natural economic consequence is the establishment of large highly capitalized processing centers. Such processors rely on high volumes, low margins, capital intensive processing, and the procurement of volumes from many ownerships and national forests. Large corporations are favored relative to the traditional small operator. Large corporations with national and international holdings can diversify away lumber price volatility affecting Wyoming's lumber markets, operate at scale, better deal with international inter-connectedness, and better manage the costs of green certification.
- Trouble for Small Processors: Wyoming's small processors who have relied on adjacent national forests for steady volumes have found themselves having to reach farther for volume and now compete with larger processors over longer distances. Securing private volumes means no Small Business Set-Aside protection. Smaller processors struggle to make the capital infusions necessary to effectively compete in the new economy. In Wyoming and throughout the West, processors configured at 12MMBF (million board feet) annual log input or lower are closing while processors of potential regional scale are considering capital infusions and expansions. Mid-sized processors (greater than 12MMBF but smaller than the regional processor) increasingly rely on technical innovation

to maximize value added and to secure niche markets better suited to larger diameter material. They struggle to make the capital infusions and acquire enough large diameter stock to maintain operating margins.

Implications

- Forest Service Sale Program: Nearly half of the volume processed in Wyoming's mills now comes from private supplies. With continuing industry consolidation, Forest Service sales face increased competition from state and private sources and the prospects of fewer bidders and longer haul distances. In essence, the Forest Service stumpage market position is changing from that of a dominant supplier to competitor with other sources. To the extent that such trends continue, a natural outcome would be to see more negotiated contracts with purchasers as the agency seeks vegetative services on low quality material and receives fewer bids per sale resulting from consolidation.
- Private supplies remain unknown with certainty but will play a greater role in the future of Wyoming's timber industry. Our interviews of processors suggested both declining private volumes under contract, and a historical recognition of underestimating the quantity and resilience of private supplies (primarily to a confusion between inventory and supply). Wyoming's private timber supplies are often associated with multi-function ranches and affected by the price of timber relative to other ranch products and services such as the price of beef. To the extent that private timber continues to increase in importance, expanding extension services could be considered.
- Timber Culture: The closure of smaller and family owned mills in the Western US and the current struggles of such mills in Wyoming pose a public policy consideration as the mills that played a key role in the development of Wyoming's culture are in jeopardy. We found the owners and representatives of small family owned mills to have a strong affiliation with the forest resource base and to have a strong sense of community responsibility. Since at least the turn of the century, local timber operators have contributed to Wyoming's natural resource culture and economic development.
- The emerging new timber economy affects Wyoming and much of the West. Many elements shape the new economy, but declining volumes and lower quality volumes from Forest Service lands resulting from environmental and amenity restrictions has been the theme. Low volumes would suggest closures to reduce capacity, but when combined with lower quality volumes, it suggests a more fundamental change in processing strategy. Processing lower quality stock requires heavy investment in capital infrastructure including technological investment and innovation. Such facilities have high fixed and low variable cost structure. Operating margins are modest and dependent on volume. Processors will increasingly look to the intra-state scale for securing volumes. Expect highly capitalized mills to secure volume over extraordinary distances from a wide mix of owners placing increased pressure on state and private inventories.
- To survive, small processors will need well-defined niches for product, for securing stumpage, and to carefully manage the technology and financing of mill efficiency.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

There are several facets to this question:

- Fire and Fuels Management Direction: There is reasonable potential for resolving issues and concerns regarding this direction. This was largely lacking in the 1985 Forest Plan, and this has been an area of great public interest and information sharing with the recent severe wildfire years. The area of greatest consensus is likely to be in low elevation, frequent fire regimes, where it is generally acknowledged that fire suppression has changed this ecosystem and put it at risk from unnatural, catastrophic wildfire. There is likely to continue to be differences in the subalpine forests, where the main areas of concern will continue to be whether or not roads and timber harvest are appropriate fuels and fire management tools in roadless areas.

- Lands Suitable for Timber Harvest: This topic is likely to be one of the most difficult to resolve in revision, as there has been public debate and lawsuits over timber harvest since the Plan's inception. The Stage III analysis, which deletes tentatively suited land from the suited base due to other multiple use objectives, will differ between alternatives. Over half of the forested land designated as suitable for timber production under the 1985 Forest Plan is within roadless areas. There are areas designated under the 1985 Plan as suitable for timber harvest that have not been entered for various reasons, including Little Goose/Piney, Dry Fork Ridge, Elk Springs, and several isolated patches in the Paintrock and Shell Creek watersheds.

- Allowable Sale Quantity (ASQ): The intent is to focus the analysis and debate over this topic in the land allocation decision. That is, rather than begin with a set of predetermined ASQs, and work backwards to get acres and outputs needed, our strategy is to define different suited land bases, determine multiple use standards and guidelines that meet the intent of the various laws defining National Forest management, and let the timber outputs be calculated last. This rationale points out, then, that the designation of land suitable for timber harvest is the primary focus of the debate.

Chapter 2: Major Revision Topics
Roadless/Wilderness

Black Tooth and Mt. Woolsey are reflected in Peggy Lake, located in the Cloud Peak Wilderness.

INTRODUCTION

Requirement to consider recommendations for wilderness:

The primary purpose of this analysis is to determine the ability of the Bighorn National Forest to supply roadless and wilderness benefits and opportunities. This will provide a basis for formulating a broad range of reasonable alternatives during development of the forest plan revision. 36 CFR 219.7(a) reads in part:

> "Unless otherwise provided by law, roadless areas within the National Forest System shall be evaluated and considered for recommendation as potential wilderness areas during the forest planning process…."

Long record of public concern (local, regional, national) with future of the roadless areas:

On many National Forests, including the Bighorn, roadless area management has been a major concern for land management planning and program development. Roadless areas are valued for many resource benefits, including their undeveloped fisheries and wildlife habitat,

biological diversity, and non-motorized recreation. The same areas are also valued for their development potential, particularly for wood products and motorized recreation. Controversy continues to accompany most proposals to harvest timber, build roads, or otherwise develop inventoried roadless areas.

The requirement in the planning regulations and the level of public concern are two reasons for designating roadless areas and wilderness recommendations as a major revision topic.

LAWS, POLICIES AND DIRECTION

Wilderness Act of September 3, 1964 (P.L 88-577)

The Wilderness Act establishes the National Wilderness Preservation System and provides management philosophy and direction for designated wilderness areas.

Wyoming Wilderness Act of October 30, 1984 (P.L. 98-550)

The Wyoming Wilderness Act established the Cloud Peak Wilderness and released other roadless areas on the Bighorn National Forest for multiple-use management.

36 CFR 219.17

Regulations for land and resource planning at 36 CFR 219.17, direct the evaluation of roadless areas and consideration of recommendations for potential wilderness areas during the forest planning process.

FSM 1923

The Forest Service Planning Manual (FSM 1923) defines the authority, policy and responsibility for consideration of wilderness suitability in the land and resource planning process. As a mater of policy, roadless areas being evaluated and ultimately recommended for wilderness are not available for any use or activity that may reduce the area's wilderness potential. Current permitted activities may continue, pending designation, if the activities do not compromise wilderness values of the roadless area.

FSM 1925

FSM 1925 provides a policy for management of inventoried roadless areas. It directs that inventoried roadless areas shall, as a general rule, be managed to preserve their roadless characteristics, until a forest scale roads analysis[16] is completed and incorporated into a forest plan. Authority to approve timber harvest and road construction or reconstruction is defined.

FSH 1909.12, 4.19c and 7

The Forest Service Planning Handbook (FSH) 1909.12, 4.19c provides a set of descriptors for roadless areas and a set of analysis factors for evaluating individual

[16] Direction for a forest scale roads analysis is in FSM 7712.13b

roadless areas. FSH 1909.12, 7 describes the process for identifying and evaluating potential wilderness including capability, availability and need considerations.

HISTORICAL SUMMARY

Wilderness Act

The Wilderness Act of 1964 included a requirement that any National Forest area previously classified as "primitive" be evaluated as to suitability or non-suitability for preservation as wilderness. The Cloud Peak Primitive Area was in this category.[17] The Chief of the Forest Service approved the first management plan for the Cloud Peak Primitive Area in 1932. On June 10, 1964 the administration recommended wilderness designation for 150,490 acreas in the Cloud Peak area to Congress.

RARE I and II

In 1972 the Forest Service began a review of roadless areas across the country called the Roadless Area Review and Evaluation or RARE I. After legal challenges, that process was followed by RARE II. Approximately 56 percent of the Bighorn National Forest (excluding the Cloud Peak) was classified as roadless in 1979 as part of the nation-wide RARE II process. Table 2-10 shows the fifteen areas and the acreages in the RARE II study on the Bighorn

Drafting the 1985 forest plan

In the late 1970's the Bighorn began the development of a land and resource management plan for the Forest. As required by planning regulations, this included a re-evaluation of roadless areas. Volume II-Appendix M of the DEIS for the Forest Plan containing roadless area information was completed and released to the public on August 8, 1984.

Wyoming Wilderness Act

On September 3, 1984, the President signed the Wyoming Wilderness Act (Public Law 98-550) designating the 189,039-acre Cloud Peak Wilderness. The Cloud Peak Wilderness included the Cloud Peak Primitive Area, the Seven Brothers RARE II area and some additional acreage contiguous with the primitive area. The Act also released all remaining RARE II areas (those not designated as wilderness by the Act) for multiple-use management. This action effectively curtailed further analysis of roadless areas as part of the 1985 Forest Planning process.

The 1985 forest plan

[17] 16 U.S.C. 1132 or Wilderness Act, Sec.3(a)(2)(b)

The Final Environmental Impact Statement and Forest Plan were completed and released with a Record of Decision dated October 4, 1985. The Wyoming Wilderness Act was recognized in the final Forest Plan document and all areas outside of the Cloud Peak were allocated for non-wilderness management areas. Of the 621,000 roadless acres allocated for multiple use, about 587,000 acres were included in management areas allowing road construction and reconstruction, and about 34,000 acres were included in management areas that do not allow road construction or reconstruction.[18.] Specifically, the Forest Plan recommended a portion of the Little Bighorn area for wild and scenic river designation. No areas are recommended for wilderness designation in the current forest plan. After 17 years of management under the current plan allocations, which included road building and timber harvest, the inventory of roadless areas in the DEIS Appendix M is out of date.

The roadless rule

After years of local and national debate on roadless area management, the Forest Service initiated a rule making process in the late 1990's. On January 12, 2001, final regulations were published in the *Federal Register* establishing requirements for protecting inventoried roadless areas on National Forest land. These regulations prohibit new road construction and timber harvest, except for special circumstances. A *Roadless Area Conservation Final Environmental Impact Statement* (roadless rule EIS) was prepared for public information. A map of inventoried roadless areas was endorsed as part of the process and printed in Volume 2 of the Draft and Final EIS. The official map of inventoried roadless areas for the Bighorn National Forest is printed in the roadless rule EIS. It is based on the Appendix M maps printed in the DEIS for the current Forest Plan and was incorporated into the 1985 Forest Plan decision. Table 2-10 identified the names and acres of inventoried roadless areas.

56% of the Bighorn National Forest is inventoried as roadless[19].

[18] acres and percents are from the data prepared by the Forest for the Roadless Rule EIS
[19] source is calculated from Roadless Rule FEIS, Volume 1, appendix A

TABLE 2-10				
Inventoried Roadless Areas from RARE II and the Roadless Rule				
Area Name	RARE II Map Number[20]	RAREII Acres[21]	Inventoried Roadless Areas Number[22]	Inventoried Roadless Areas Acres[23]
Bear Rocks	026	25,090	02026	25,029
Bruce Mountain	028	5,630	02028	5,417
Cloud Peak Contiguous	031	151,410	02031	113,771
Devils Canyon	021	34,280	02021	37,750
Doyle Creek	038	6,910	02038	6,541
Grommund Creek	033	12,800	02033	12,086
Hazelton Peaks	036	10,500	02036	10,030
Hideout Creek	025	10,750	02025	10,098
Horse Creek Mesa	027	79,620	02027	77,833
Leigh Creek	037	25,320	02037	19,478
Little Bighorn	020	134,760	02020	134,863
Little Goose	030	37,760	02030	25,555
Piney Creek	029	23,550	02029	22,235
Rock Creek	032	51,200	02032	48,674
Seven Brothers	034	5,370	02034	*
Sibley Lake	024	12,290	02024	10,369
Walker Prairie	023	62,530	02023	63,312
Total Acres		689,770		623,041

*Seven Brothers area was added to the Cloud Peak Primitive Area in the Wyoming Wilderness Act of 1984 to create the Cloud Peak Wilderness.

On May 10, 2001, the courts enjoined implementation of the roadless rule until the Forest Service could re-evaluate what it considered shortcomings in its analysis, including the need for more participation by states, tribes and local communities. The most recent development is the May 31, 2002 *Advance Notice of Proposed Rulemaking: Summary of Public Comment.*

1.1.1.1.1.1.1.1.1 Current direction for management of inventoried roadless areas

Currently the Bighorn is operating under the interim direction found in FSM 1925, which directs that 'inventoried roadless areas shall, as a general rule, be managed to preserve their roadless characteristics, until a forest scale roads analysis is completed and incorporated into a forest plan.

[20] source of numbers is Rare II map on file at the Supervisors Office, Bighorn National Forest, Sheridan, Wyoming.
[21] source for acres is the DEIS, Volume 2, Appendix M for the Bighorn National Forest Land and Resource Management Plan.
[22] source for numbers is the DEIS, Volume 2, Appendix M for the Bighorn National Forest Land and Resource Management Plan.
[23] source for acres is GIS maps prepared by the Forest for the Roadless Rule EIS

Key values from the roadless rule

The key values of roadless lands are identified in the Final EIS for the roadless rule. The importance of these key values was reinforced in the Chief's memo of June 7, 2001 directing protection and managment of roadless areas by ensuring we protect and sustain roadless values until they can be appropriately considered through forest planning."[24] The nine values of roadless lands include:

1. High quality or undisturbed soil, water and air
2. Sources of public drinking water
3. Diversity of plant and animal communities
4. Habitat for threatened, endangered, proposed, candidate, and sensitive species and those species dependent on large, undisturbed areas of land
5. Primitive, semi-primitive, non-motorized and semi-primitive motorized classes of dispersed recreation
6. Reference landscapes
7. Natural appearing landscapes with high scenic quality
8. Traditional cultural properties and sacred sites
9. Other locally identified unique characteristics

CURRENT CONDITIONS

Cloud Peak attributes, use and percentage of forest in wilderness

The Cloud Peak Wilderness is the only designated wilderness area on the Bighorn National Forest. The Cloud Peak contains 189,039 acres covering 17% of the Forest.[25] In the Wyoming Wilderness Act of October 31, 1984, Congress added it to the National Wilderness Preservation System.

The Cloud Peak includes the highest elevation areas of the Forest. Approximately 47% of the Wilderness is in the alpine climate zone, 30% is subalpine, and 22% is montane/subalpine.[26] The National Forest is predominately in the mixed subalpine/montane zone. Very small areas on the Bighorn National Forest are in the montane; mixed montane/lower montane; lower montane and semiarid climate zones.

The Cloud Peak has a mandatory wilderness user registration system. However, it involves no fee and no restriction of use. This system provides information on wilderness use and ethics. It also provides the manager with demographic

[24] File 1230/1920, re: Delegation of Authority/Interim Protection of Roadless Areas, to Regional Foresters, Station Directors, Area Director, IITF Director, and WO Staff, from Dale N. Bosworth, Chief.
[25] ***Land Areas of the National Forest System****: As of September 1999*, FS-383. USDA Forest Service, Washington D.C., January 2000. p. 33, 93.
[26] 1% of the Cloud Peak area was not given a climate zone classification. For data see project file..

data on wilderness users. Users come from every state in the nation. The largest number of users live in Wyoming. Other states represented by large visitor numbers are Minnesota, South Dakota, Wisconsin, Iowa, Colorado, and Illinois. The number of RVD's[27] generally varies between 60,000 and 70,000. Weather, travel costs and national events are believed to influence user numbers on an annual basis. The growth trend is modest, 2-4% per year for 1993 to 2000.[28]

Roadless Area attributes and percentage of forest in roadless areas

For Forest Plan revision a new roadless inventory, the 2002 Inventory, was developed. The new inventory will be used to (1) evaluate roadless areas for wilderness recommendation and to (2) evaluate roadless areas for management prescriptions that retain roadless characteristics. The maps developed for the 2002 Inventory of Roadless Areas will be the basis for revising the official Inventoried Roadless Areas when a process for updating is identified.

The 2002 Inventory includes fifteen areas for a total of 532,268 acres, which is about 48% of the Bighorn National Forest:

Table 2-11

2002 Inventory of Roadless Areas

Map Number	Name	Acres
BNF020	Little Bighorn	114,040
BNF021	Devils Canyon	33,230
BNF023	Walker Prairie	52,940
BNF025	Hideout Creek	8,593
BNF026	Bear Rocks	23,601
BNF027	Horse Creek Mesa	76,983
BNF029	Piney Creek	21,602
BNF030	Little Goose East	18,674
BNF031	Cloud Peak Contiguous North	21,568
BNF032	Rock Creek	47,415
BNF033	Grommund Creek	8,069
BNF036	Hazelton Peaks	7,147
BNF037	Leigh Creek	13,615
BNF040	Little Goose West	6,699
BNF041	Cloud Peak Contiguous West	78,092
		532,268[29]

[27] RVD's are recreation visitor days. One RVD is one person engaging in a recreation activity for twelve hours.

[28] Craig C. Cope, Annual Report on the Cloud Peak Wilderness – 2001, USDA Forest Service, Bighorn National Forest, Buffalo, Wyoming, revised December 12, 2001, and Summer of Recreation use, year 1986 to 2000, revised August 23, 2002.

[29] 532268/1107671 ***Land Areas of the National Forest System****: As of September 1999*, FS-383. USDA Forest Service, Washington D.C., January 2000. p. 33,

An analysis of undeveloped areas less than 5000 acres was also conducted. Mapping revealed that 14 areas met the roadless criteria, but were under 5000 acres. Four of the areas were contiguous to the Cloud Peak Wilderness and were included into the Cloud Peak contiguous north or west roadless areas. The other ten are shown in table 2-12. These areas were reviewed against the nine key roadless values listed above, and the summary report is in the revision record. None of these ten undeveloped areas under 5000 acres was carried forward as either roadless areas or to receive further review as potential wilderness. They were not carried forward because they are not particularly rare, important or unique areas, and because about 65% of the Bighorn NF is either in the Cloud Peak Wilderness or met the criteria for the larger than 5000 acre roadless areas.

Table 2-12

2002 Inventory of Undeveloped Areas under 5,000 acres

Map Number	Name	Acres
01	Five Springs Point	720
02	Teepee Creek Headwaters	737
03	Lake Creek	2,009
04	Marcum Creek	813
05	South Tongue	2,914
06	Bruce Mountain	4,875
11	South Paintrock Headwaters	2,230
12	Indian Creek	1,549
13	North Powder	1,195
14	Doyle Creek	4,734

Relation to adjacent public lands wilderness and roadless areas

The Cloud Peak is the nearest existing wilderness to each of the inventoried roadless areas. The Cloud Peak Contiguous North, Cloud Peak Contiguous West, Rock Creek, Piney Creek, Little Goose West, and Little Goose East areas are adjacent to the existing Cloud Peak Wilderness. The Devils Canyon area is the most distant from Cloud Peak at 27 miles.

The Bureau of Land Management (BLM) – Worland Field Office administers roadless areas on the west side of the Bighorn Mountains in the Bighorn Basin. Three areas are recommended for wilderness designation - Medicine Lodge Canyon, a part of the Medicine Lodge area, the Alkali Creek area and the Trapper Creek area. The Medicine Lodge area and two other inventoried roadless areas – Paint Rock and South Paint Rock are contiguous with the Forest's Cloud Peak Contiguous West roadless area. Evaluation of the Cloud Peak Contiguous West area included consideration of the contiguous areas administered by the BLM.

BENCHMARK ANALYSIS SUMMARY

The potential supply of wilderness on the Bighorn National Forest includes those roadless areas (2002 inventory) that are both capable and available based on criteria provided in FSH 1909.12, 4.19c and 7. Six areas were rated as capable and available for wilderness recommendation. Table 2-13 lists the six areas. Table 2-14 below summarize the criteria and ratings of capability and availability for all fifteen roadless areas in the 2002 inventory. More detailed descriptions of the attributes considered in assigning ratings will be included in the planning record. Some of these areas may be included in revision alternatives.

Table 2-13

Potential Supply of Wilderness (2002 Roadless Area Inventory)

Map Number	Name	Acres
BNF020	Little Bighorn	114,040
BNF021	Devils Canyon	33,230
BNF023	Walker Prairie	52,940
BNF027	Horse Creek Mesa	76,983
BNF031	Cloud Peak North	21,568
BNF032	Rock Creek	47,415

DEMAND ASSESSMENT

Forest Service Handbook 1909.12, 7 describes the process for identifying and evaluating potential wilderness need considerations. This evaluation will be incorporated into the effects analysis.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

In 1977, then Deputy Regional Forester S.H. Hanks wrote a memo to Region 2 Forest Supervisors and Directors that began:

> "This is to bring you up to date on where we are and where we are going with RARE II.
>
> "The purpose of RARE II is to quickly resolve as much of the roadless area issue as possible. … All levels of Forest Service management are fully committed to bringing RARE II to a satisfactory conclusion."

Despite RARE II and the subsequent Wyoming Wilderness Bill, roadless areas are still an issue of public concern and interest 25 years after Mr. Hanks' letter. This is evidenced by the recent roadless rule promulgation and the interest in this topic at the Forest Plan revision scoping meetings and scoping letters.

The regulations and Forest Service Handbook direction provides for reanalysis of roadless areas for potential Wilderness System inclusion during each planning cycle, so "resolution" of this topic is not the operative term. Rather, the revision process has resulted in an inventory of lands eligible as roadless. The alternatives will allow for effects analysis of various levels of

roadless/Wilderness areas on the Bighorn National Forest, and the eventual decision and Revised Forest Plan will “resolve” this issue for this planning period.

TABLE 2-14

Summary of Capability Analysis for the 2002 Inventory of Roadless Areas

Area Name	Map Number	Size	Environment		Challenge	Primitive Recreation	Special Features		Manageability (boundaries)	Capable or Not Capable
			Solitude	Naturalness			Education	Scenery		
Little Bighorn	BNF020	114,040	very high	high	high	very high	very high	very high	high	capable
Devils Canyon[30]	BNF021	33,230	very high	high	very high	high	low	very high	high	capable
Walker Prairie	BNF023	52,940	very high	high	very high	high	high	very high	high	capable
Hideout Creek	BNF025	8,593	low	moderate	low	low	low	moderate	low	not capable
Bear Rocks	BNF026	23,601	moderate	high	moderate	moderate	low	moderate	low	not capable
Horse Creek Mesa[31]	BNF027	76,983	very high/ low	high	high	high	moderate	very high	high/low	capable
Piney Creek	BNF029	21,602	low/ moderate	moderate/ high	moderate	moderate	low	very high	low	not capable
Little Goose East	BNF030	18,674	moderate	high	moderate/ high	moderate	low	moderate	moderate	not capable
Cloud Peak Contiguous North	BNF031	21,568	very high	very high	moderate	high	moderate	high/ very high	high	capable
Rock Creek	BNF032	47,415	very high	high	high	very high	high	very high	high	capable
Grommund Creek	BNF033	8,069	moderate	high	moderate	low	low	low	low	not capable
Hazelton Peaks	BNF036	7,147	very high	high	moderate/ high	low	moderate/ low	very high	low/ moderate	not capable
Leigh Creek	BNF037	13,615	moderate/ high	low	low/ moderate	low	moderate	very high	low	not capable
Little Goose West	BNF040	6,699	low	high	moderate	low	low	low	very low/ high	not capable
Cloud Peak Contiguous West	BNF041	78,092	low/ very high	high	high	low/high	low/high	high	low/high	not capable

[30] If the north third of the area is excluded, the higher rating applies

[31] more than half of the area provides an outstanding environment with topographic and vegetative diversity.

Chapter 2 – Major Revision Issues
Special Areas

Wild and Scenic Rivers

Piney Creek near its headwaters in the Cloud Peak Wilderness.

INTRODUCTION

The Wild and Scenic Rivers Act of 1968 established a policy for preserving selected rivers in a free-flowing condition, to protect water quality of such rivers and to fulfill other vital national conservation measures that would balance the development of water, power and other resources on rivers of the United States.

For a river to be included in the Wild and Scenic Rivers System, it must be found eligible and suitable. The forest identified eligible rivers for consideration to be designated as a wild and scenic river and made recommendations by alternative based on those found suitable.

Each river on the forest or segments must be free-flowing to be considered eligible for wild and scenic study. The Wild and Scenic Rivers Act defines “free-flowing” as existing or flowing in a natural condition without impoundment, diversion, straightening, riprapping or other modification of the waterway. In addition to free flowing, an eligible river must have one or more outstandingly remarkable values within the river area:

- Scenic
- Recreational
- Geological
- Fish and wildlife
- Historical
- Cultural

- Ecological

There are specific criteria for each value to be used. After the outstandingly remarkable characteristics are determined, each river segment is classified as wild, scenic or recreational. These classifications will become separate management areas in the forest plan. Again, there are criteria and restrictions for the classifications.

The suitability analysis addresses factors identified in Section 4(a) of the Wild and Scenic Rivers Act. It includes a discussion of the consequences of designating or not designating the river as a component of the National System. The factors are:

- Characteristics that do or do not make the area a worthy addition to the National system
- Current status of land ownership and use in the area
- Foreseeable potential uses of the land and water that would be enhanced, foreclosed or curtailed if the area were included in the National System
- Public, state and local governmental interests
- Estimated cost of acquiring lands and management as a Wild and Scenic River

LAWS, POLICIES AND DIRECTION

With the passage of Public Law 90-542 (the Wild and Scenic Rivers Act of 1968), Congress called for the identification of potential wild, scenic, and recreational river areas within the nation:

> *"In all planning for the use and development of water and related land resources, consideration shall be given by all Federal agencies involved to potential national wild, scenic and recreational river areas, and all river basin and project plan reports submitted to the Congress shall consider and discuss any such potential. The Secretary of the Interior and the Secretary of Agriculture shall make specific studies and investigations to determine which additional wild, scenic and recreational river areas within the United States shall be evaluated in planning reports by all Federal agencies as potential alternative uses of the water and related land resources involved."*

HISTORICAL SUMMARY

During the 1985 planning process, two rivers were identified as eligible for wild and scenic river designation. The Little Bighorn and Tongue Rivers were protected in 10D, wild and scenic rivers management area. In June 1989, the forest completed the Wild and Scenic River Study Report and Final Environmental Impact Statement on the Little Bighorn River. The river was found suitable for designation and recommended to Congress. The Tongue River never had a suitability study.

CURRENT CONDITIONS

The following table displays the results of eligibility and suitability ratings conducted on the Bighorn National Forest.

Table 2-15 Wild and Scenic River Evaluation

Bighorn National Forest Wild and Scenic River Evaluation				
River	**Ranger District**	**Eligible Miles**	**Outstandingly Remarkable Values**	**Suitable**
Little Bighorn	Tongue	20.0	scenery	yes
Tongue	Tongue	33.0	scenery, recreation fisheries	yes 30 miles suitable
Piney Creek	Tongue	not eligible		
South Rock Creek	Powder River	16.3	scenery geology	yes
Tensleep Creek	Powder River	6.8	scenery geology	no
Crazy Woman Creek	Powder River	4.5	scenery vegetation	no
Cedar Creek	MedWheel/Paintrck	8.5	fisheries scenery	no
Lodge Grass Creek	MedWheel/Paintrck	not eligible		
Porcupine Creek	MedWheel/Paintrck	6.3	scenery cultural	yes
Shell Creek	MedWheel/Paintrck	not eligible		
Paintrock Creek	MedWheel/Paintrck	14.8	scenery geology	yes
Medicine Lodge	MedWheel/Paintrck	not eligible		
Total Eligible Miles on forest		**110.2**		
Total Suitable Miles on forest				**87.4**

DEMAND

It is difficult to estimate demand since the resource exists with or without wild and scenic river designation. There is only one designated river in Wyoming, the Clark's Fork on the Shoshone National Forest. There is considerable interest for the forest to look at its streams and protect the outstandingly remarkable features of those found eligible.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

The plan revision will determine which rivers or streams will be given a wild and scenic river management area.

While some people would oppose additional wild and scenic river management areas designation, others have requested protection of outstandingly remarkable features for those rivers found suitable for designation.

Potential Research Natural Areas

Devil's Canyon: one of the eleven areas inventoried as a potential RNA

BACKGROUND INFORMATION

"Forest planning shall provide for the establishment of Research Natural Areas (RNA's). Planning shall make provision for the identification of important forest, shrubland, grassland, alpine, aquatic and geologic types that have special or unique characteristics of scientific interest and importance that are need to complete the national network of RNA's." 36 CFR 219.25

Forest Service Manual 4063.02 lists the objectives for establishing RNA's:

1. To preserve a wide spectrum of pristine areas that represent important forest, shrubland, grassland, alpine, aquatic, geological and similar natural situations that have special or unique characteristics;
2. To preserve and maintain genetic diversity;
3. To protect against serious environmental disruptions;
4. To serve as reference areas for the study of succession;
5. To provide on-site and extension educational activities;
6. To serve as baseline areas for measuring long-term ecological changes;
7. To serve as control areas for comparing results from manipulative research; and
8. To monitor effects of resource management techniques and practices.

There are currently two RNAs on the Bighorn National Forest. Some of the pertinent features of the Bighorn RNAs are shown in Table 2-16.

Table 2-16. Selected Features of Bighorn National Forest Research Natural Areas

Name	Acres	Date Established	Special Features
1.1.1.1.1.1.1.2 Bull Elk Park	728	1952	201 acres of disjunct Palouse Prairie Climax; *Agropyron-Festuca* association. Remainder of area is primarily lodgepole pine montane forests.
Shell Canyon	738	1987	Primary reason for establishment is Rocky Mountain juniper community. Most other sites have been seriously disturbed, and Shell is considered to be in good condition.

The RNA selection criteria in Region 2 is (USDA Forest Service, 1993):[32]

1. Quality – how well a site represents the targeted ecosystem type of protected biodiversity elements.
2. Condition – how much the site has been degraded or altered from natural or optimal conditions.
3. Viability – the likelihood of long-term survival for the ecosystem and its protected biodiversity.
4. Defensibility – extent to which the ecosystem and biodiversity elements can be protected from extrinsic human factors.

Bighorn Forest Plan Revision RNA process

Initial identification of additional areas for potential RNA (pRNA) designation began in about 1994, when several forest resource specialists met to identify areas on the Forest thought to meet the RNA selection criteria. Eleven areas were selected:

[32] USDA Forest Service. 1993. Research Natural Area Guide for the Rocky Mountain Region, USDA Forest Service, review draft. Rocky Mountain Region, Lakewood, CO. 38p.

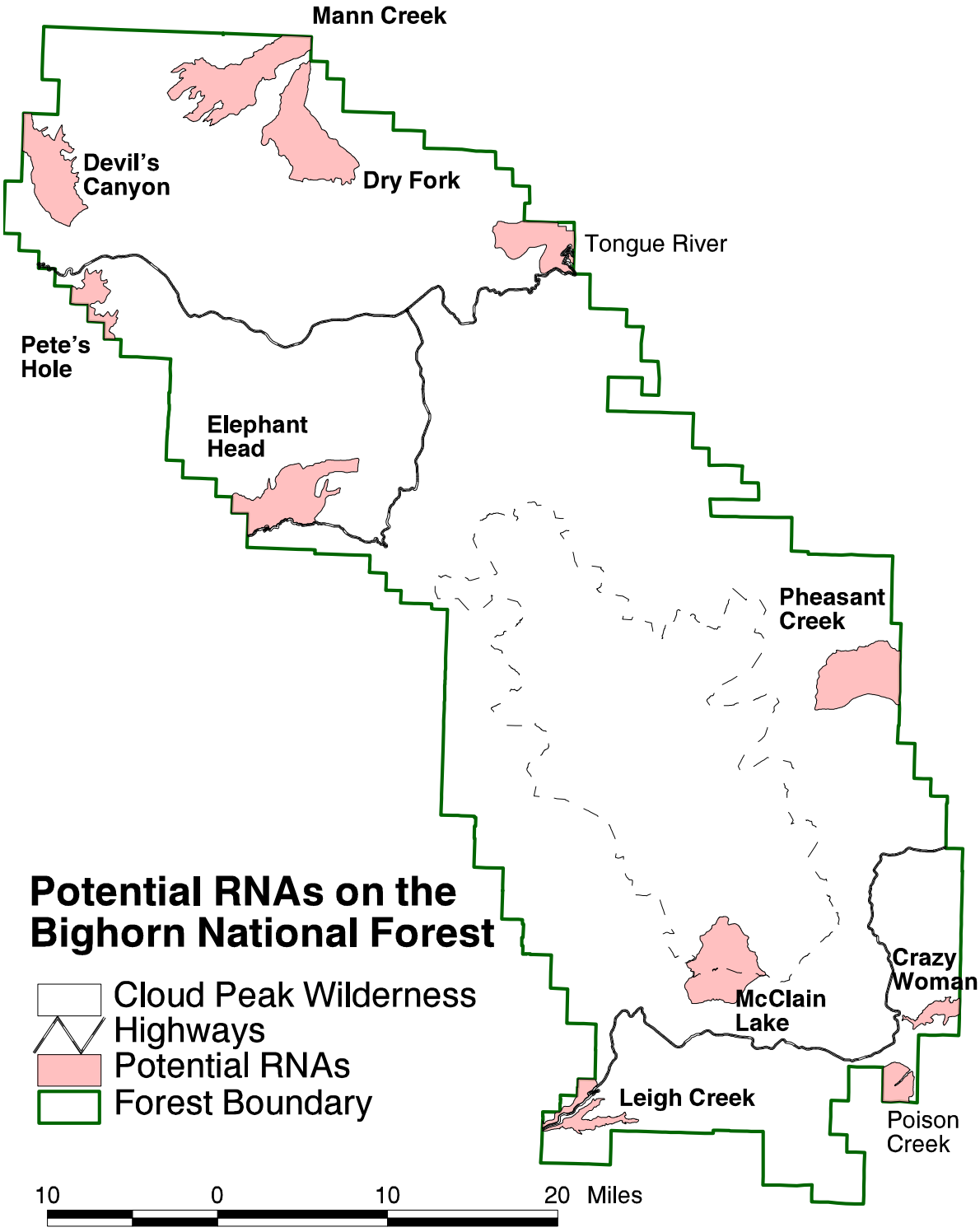
- Crazy Woman Canyon
- Devil's Canyon
- Dry Fork
- Elephant Head
- Leigh Creek
- Mann Creek
- McClain Lake
- Pete's Hole
- Pheasant Creek
- Poison Creek
- Tongue River

See map of the eleven potential RNAs on the next page.

The Bighorn National Forest contracted with the Wyoming Natural Diversity Database (WYNDD) to conduct ecological evaluations. Trout Unlimited in Sheridan funded the Mann Creek ecological evaluation, but Forest Service personnel administered the contract.

The ecological evaluations included field review by WYNDD botanists, ecologists, and/or wildlife biologists; interaction with Forest Service and Wyoming Game and Fish specialists; and, review of pertinent vegetation and animal databases. National Forest and Game and Fish specialists reviewed initial drafts of the ecological evaluations. Upon receipt of the ecological evaluations, most of the pRNAs were field reviewed by Tom Andrews (Region 2 RNA ecologist), Bernie Bornong (Bighorn NF RNA coordinator), and usually the appropriate district ranger. The ecological evaluations are available for review at the Bighorn National Forest Supervisor's Office in Sheridan. The Forestwide Existing Condition Assessment includes a summary of how each of the eleven pRNAs meet the selection criteria and includes a brief summary of the ecology of each pRNA (www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm).

1.1.1.1.1.1.1.2.1 The Eleven Areas Inventoried as Potential RNAs



DEMAND

The demand for additional Research Natural Areas is primarily internally driven by the objective of providing for a representative network of ecological and biological systems that can be used as a baseline for "naturalness" in an otherwise "managed" world. To date, there has been no known research conducted on the two existing RNAs on the Bighorn National Forest.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

The plan revision will determine which of the pRNAs will be allocated to the RNA management area. Initial alternatives include four of the pRNAs to be added to the RNA system, based upon providing a broad range of ecological and community types:

- Mann Creek – low elevation, mixed forest/grassland/shrub communities in sedimentary canyons
- Pheasant Creek – mid elevation, lodgepole pine forest on granitic substrates
- McClain Lake – high elevation, spruce-fir/alpine communities on granitic substrates
- Leigh Canyon – low elevation, mixed forest/grassland/shrub communities in sedimentary canyons

All of the pRNAs were selected because there were minimal or nonexistent conflicts with other multiple uses. To the extent that was achieved, the potential to resolve issues and concerns with RNA designations should be reasonable.

Chapter 2 – Major Revision Issues
Recreation and Travel Management

Snowmobiling and hiking are two of the many popular recreation activities in the Big Horn Mountains.

INTRODUCTION

Recreation use on the Bighorn National Forest is steadily increasing. Not only is the number of visits increasing, the complexity of uses and user expectations are increasing. Increased and changing dispersed recreation use has heightened the issue of recreation and travel management that needs to be addressed as we enter into the next decade of management for the Bighorn National Forest.

Dispersed recreation use, especially snowmachine and ATV (All Terrain Vehicle) motorized use, has grown substantially since 1985. There were few if any ATVs on the forest at that time and now there may be several hundred on any weekend day on the forest. The use of atvs is very popular for summer riding and camping and also during the fall hunting season. Because of this growth, there are more conflicts for those seeking a more primitive experience on the forest.

The forest currently has about 123,585 acres open to cross-country motorized travel. The miles of user created trails in these areas have increased. The notice of intent published in the Federal Register November 10, 1999 proposed to eliminate cross-country travel except on designated routes.

Outdoor recreation and tourism are a major industry in north central Wyoming. Not only does providing services in recreation and tourism employ people, but this income also helps diversify local economies. In a 1990 study on tourism by the Big Horn Mountain Country Coalition and the University of Wyoming, researchers identified that a major

activity for the Bighorn National Forest visitor was viewing natural scenery and watching wildlife.

Since the Forest Plan was implemented in 1985, changes have occurred in recreation uses and patterns. There were many issues identified during public scoping meetings held during fall 2000 and letters received that related to recreation and travel management. Some of those issues are:

- Separating motorized and nonmotorized users
- Resource damage concerns from increasing numbers of recreation users
- Access should be provided
- Motorized travel should be restricted to designated routes
- Need to identify areas for winter nonmotorized use

The Big Horn Mountains are a travel-through area for people between Mount Rushmore and Yellowstone National Park. In 1985 there were 2,226,159 visitors to Yellowstone and in 2000 there were 2,838,233, an increase of nine percent. This is a representative growth number because use has fluctuated during the past fifteen years.

LAWS, POLICIES AND DIRECTION

Forest Planning Regulation 36 CFR 219.21 requires evalutation of recreation resources including the recreation opportunity spectrum (ROS), scenic integrity objectives, supply of developed recreational facilities and motorized vehicle opportunities.

HISTORICAL SUMMARY

The 1985 Plan provided for additional campgrounds and trails. Many of those campgrounds and trails were not built because of lack of recreation funding. Although travel management constraints have been applied on the travel map, this remains one of the most controversial facets of current management. Road closures have caused considerable controversy. Strong feelings have surfaced on both sides of the issue during public meetings held as part of the revision process. While many people want fewer closures to motorized vehicles, many others want more closure to motorized vehicles. Decisions are needed that seek to balance opportunities for the many modes of travel on the forest.

CURRENT CONDITIONS (SUPPLY)

Developed Recreation

Developed recreation opportunities are located primarily along existing travelways. Most developed campgrounds are managed through a concessionaire program. The season is from May to September and campgrounds are open only during a portion of May and September. Campground occupancy during 2000 was twenty percent in May, forty percent in June, eighty-seven percent in July, eighty-four percent in August and forty-six percent in September.

There are 37 developed campgrounds on the forest with a total of 496 campsites, sixteen picnic grounds with several picnic sites, twenty-two trailheads and three

warming huts for cross country skiers in the winter. In addition, there are several parking lots and areas that provide information services on the forest. The Bighorn's major emphasis and effort for developed facilities is enhancement by reconstructing these facilities or expanding them where site conditions allow. The goal is to maintain a wide spectrum of quality facilities (campgrounds, picnic areas, interpretive sites and trailheads). Three Scenic Byways are situated on the forest. Direction for the Scenic Byways may be included in the plan revision. The Byways will be in a separate management area with standards and guidelines applicable to those areas.

Interpretive services are provided at three major sites: Burgess Visitor Center on US Highway 14, Shell Falls Visitor Center on US Highway 14 and Medicine Wheel Historic Preservation site on US Highway 14A.

Dispersed Recreation

Dispersed recreation continues to increase at rates exceeding Forest Plan projections. People continue to return to their favorite secluded site to enjoy it with their family and friends. There are 2,992 dispersed campsites on the Bighorn National Forest outside of wilderness that were identified and mapped in 1997 and updated in 2001. During summer 2002, campsite inventories for condition were conducted on each district.

There are an additional 1,387 dispersed campsites that were inventoried in the wilderness in the mid 1980's.

The key to providing quality dispersed recreation opportunities and experiences is to manage a broad spectrum of recreation settings so visitors to the Bighorn National Forest area are provided choices. The mix of recreation settings on the forest provides for summer, fall and winter as well as motorized and nonmotorized recreational activities. Balancing the mix and resolving conflicts is the challenge.

The dispersed recreation program on the Bighorns has been directed in the past to the more popular traditional activities such as fishing, hunting, hiking, horseback riding, dispersed camping and winter activities such as snowmobiling and cross-country skiing. These activities will continue to be provided and managed. Nontraditional, dispersed recreation activities such as riding ATV's and mountain bikes and rock climbing are becoming more important in long term planning, not only to provide the opportunity but also to protect the resource.

Dispersed recreation direction will be improved by deciding forestwide standards and guidelines, management areas, ROS classes and scenery objectives.

Ski Areas

Antelope Butte and Bighorn Mountain Ski Area are located entirely on the forest. A review of past use at the ski areas shows an erratic pattern due to ski-lift capacity and snow conditions. The current ski-area capacity exceeds use. Antelope Butte has been expanded with further plans identified in the master plan for the area. Bighorn Mountain Ski Area has also expanded their skiing terrain and lift capacity.

Recreation Settings

Some people desire an emphasis on undeveloped, remote recreation settings, other people want a mix of developed and undeveloped settings and yet others are interested in seeing more developed facilities and easier access. The recreational opportunities and experiences associated with each setting are linked to the physical landscape (size of the area, remoteness and degree of human influences), social interaction (amount and types of contact) and managerial efforts (degree of regulation).

The Forest Service uses the ROS (Recreation Opportunity Spectrum) to describe different recreation experiences. These experiences are separated in ROS classes. The following ROS classes and acres have been identified on the forest:

Primitive – 181,232 acres

These areas are characterized by an unmodified environment and have a very high probability of experiencing solitude, freedom, closeness to nature, tranquility, self-reliance, challenge and risk. There is very low interaction between recreation users. Access and travel is nonmotorized on trails or cross country.

Semi-primitive nonmotorized – 278,105 acres

Areas in a semi-primitive nonmotorized class are in a natural appearing environment with a high probability of experiencing solitude, closeness to nature, tranquility, self-reliance, challenge and risk. There is low interaction between users. Access and travel is nonmotorized on trails, some primitive roads or cross-country.

Semi-primitive motorized – 372,549 acres

There is a moderate probability of experiencing solitude, closeness to nature and tranquility. The setting is in a predominantly natural appearing environment. There is a low concentration of users, but often evidence of others on trails. Motorized vehicles are allowed for travel.

Roaded modified – 106,532 acres

In a roaded modified setting, there is opportunity to get away from others, but with easy access. There is moderate evidence of other users on roads and little evidence of others or interaction at camp sites. Conventional motorized access includes sedan, trailer, atv and motorcycle travel. These areas are located where concentrations of roads occur from past timber harvest.

Roaded natural – 140,393 acres

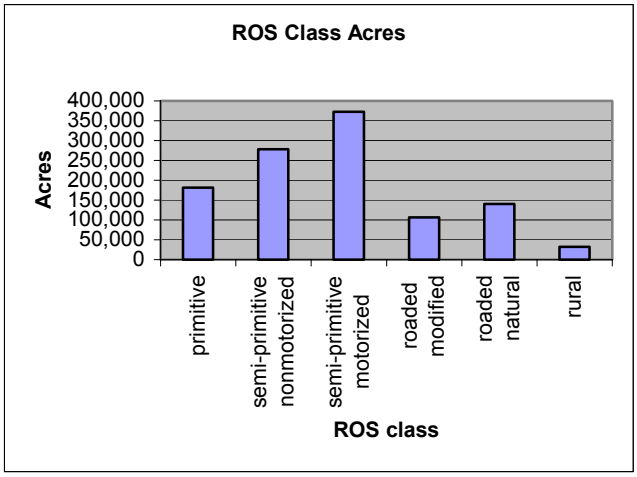
Self-reliance on outdoor skill is of only moderate importance to the recreation user with little challenge and risk. The environment is mostly natural appearing. Access and travel is motorized including sedan and trailers. These areas are located along the major US Highways 14 and 14A corridors.

Rural – 32,544 acres

The opportunity to observe and affiliate with other users is important as is convenience of facilities and recreation opportunities. There is little challenge and risk. Interaction between users may be high as is evidence of other users.

The following bar chart displays the acres of ROS classes on the forest.

Figure 2-17. Recreation Opportunity Spectrum Class Acres



Recreation Special Uses

Currently there are 53 outfitter/guides providing services throughout the year on the Bighorn National Forest. Twenty-one of those outfitters provide service in the Cloud Peak Wilderness. The following table displays existing activities and numbers of service days[33] issued on the forest.

Table 2-18 Outfitter/guide use on the Bighorn National Forest

1.1.1.1.1.1.1.3 Bighorn National Forest *Outfitter/guide use by activity by district*				
Activity by district	**Tongue**	**Powder River**	**Medicine Wheel/Paintrock**	**Total**
Spring				
spring bear hunting	149	0	75	224
Summer				
trail rides, camping, fishing	2,650	10,616	1,979	15,245
fishing	80	172	206	458
cattle drives	180		390	570
rock climbing		160		160
backpacking		660		660
env. ed ,backpacking			1,790	1,790
Fall				
big game hunting	441	245	2,192	2,878
Winter				
snowmobile guiding	1,600	1,750	790	4,140

[33] A service day is a day or any part of a day on the National Forest System lands for which an outfitter or guide provides goods or services, including transportation, to a client.

dog sledding			20	20
lion hunting	40	40		80
Total Service Days provided on the Bighorn National Forest				**26,225**

The interest and demand for new outfitters and new uses increases yearly. As part of the plan revision, the forest conducted a needs analysis to determine criteria if or when additional outfitter/guides or new uses will be authorized.

Travel Management

The current travel management policy on the Bighorns limits motorized travel to system roads and trails with the following exceptions:

- Travel in the "C" areas on the travel map (C areas are open to off-road travel in the summer, as long as resource damage does not occur. In A areas, summer motorized travelers must stay on designated roads and trails.)
- Winter snowmobile use outside of restricted areas such as winter range

There were four meetings in Buffalo during January, February, March and May 2002 that focused on the recreation / travel management issue of proposing to limit off road travel (change C areas to A areas). There were also meetings in Greybull to discuss the issue.

The group was asked how changing C to A areas would affect them and they were asked to identify their important travel routes and destinations. Opinions are varied in the proposed management. Some persons responded they would like to see all roads and trails remain open. Others thought recreation opportunities and resource protection could best be managed by changing C areas to A areas. .

Forest Road System

There are approximately 1,818 miles of roads in the Bighorn National Forest. This system of roads accesses an area of 1,738 square miles, including wilderness and private lands. The road system in this analysis area varies from high standard US Highways to primitive, abandoned wheel tracks. The following table gives a breakdown of roads within the National Forest:

Table 2-19. Miles of Road by Jurisdiction

JURISDICTION	LENGTH (miles)
Forest Service	1,544
Unclassified[34]	274
Total	**1,818**

Total Road Density (*not including wilderness and private lands, but including roads open to motorized travel and closed roads*): **1.27** miles of road/per square mile of forest

[34] Unclassified roads are roads on the National Forest System lands that are not managed as part of the forest transportation system, such as unplanned roads, abandoned travelways, and off-road vehicle tracks that have not been designated and managed as a trail; and those roads that were once under permit or other authorization and were not decommissioned upon the termination of the authorization.

Open Road Density (*not including unclassified roads, but including roads open to motorized travel*): **1.08** miles of road/per square mile of forest

Maintenance Level[35]	Miles	Annual cost/mile[36]	Deferred cost/mile
1	580.89	$683	$ 886
2	759.77	$920	$ 2,316
3	191.59	$6,561	$ 8,109
4	77.68	$5,991	$14,730

Total needs for annual maintenance in Bighorn National Forest = $ 2,818,139.14
Total needs for deferred maintenance in Bighorn National Forest = $ 4,972,125.57
In addition, deferred maintenance for road bridges and major culverts is: $ 263,679

Current funding levels for road maintenance over the past three years have remained fairly constant, with an approximate allocation of $ 460,000. This amount is far below the level needed for full implementation of the current transportation system forest wide. Current forest plan standard for full maintenance is also not being met under current allocations. Currently, general plan direction states to keep roads open to public use unless financing is not available to maintain the facility, or use is causing unacceptable damage to soil and water resources. Based on current deferred maintenance and annual maintenance needs, plan direction is not being met.

Trails

Motorized trails include those trails where ATVs and/or dirt bikes are acceptable uses. Nonmotorized trails include those trails for hiking, horseback riding and mountain biking.

Total miles includes miles of trail added to the forest trail system with the 1997 Little Goose/Park Reservoir decision on the Tongue Ranger District and miles of trail in

[35] **Road Maintenance Level**
Defines the level of service provided by, and maintenance required for, a specific road, consistent with road management objectives and maintenance criteria (FSH 7709.58, Section 12.3). The maintenance levels are:

1. **Maintenance Level 1:** Assigned to intermittent service roads during the time they are closed to vehicular traffic. The closure period is 1 year or longer. Basic custodial maintenance is performed.
2. **Maintenance Level 2:** Assigned to roads open for use by high-clearance vehicles. Passenger car traffic is not a consideration.
3. **Maintenance Level 3:** Assigned to roads open and maintained for travel by a prudent driver in a standard passenger car. User comfort and convenience are not considered priorities.
4. **Maintenance Level 4:** Assigned to roads that provide a moderate degree of user comfort and convenience at moderate travel speeds.
5. **Maintenance Level 5:** Assigned to roads that provide a high degree of user comfort and convenience. Normally, roads are double-laned and paved, or aggregate-surfaced with dust abatement.

[36] * Costs arrived from performing condition surveys on each level 3, 4, and 5 road on the forest in 1999, and from a random sample of level 1 and 2 roads in 2000. Costs per mile were interpolated from these surveys.

the Cloud Peak Wilderness. There are 143 miles of trail within the Cloud Peak Wilderness. Total miles of trail on the forest including winter trails are 1,248 miles.

The following chart displays approximate trail miles on the Bighorn National Forest.

Miles of Trail			
Ranger District:	*motorized trails*	*nonmotorized trails*	Total miles by district
Tongue	98	210	308
Powder River	116	182	298
Medicine Wheel/Paintrock	65	154	219
summer use trails	**279**	**546**	**825**
snowmobile trails	347		
cross country ski trails		56	

BENCHMARK ANALYSIS

The following demand assessment provides some sideboards concerning projected future use that may help define alternatives. The following chart shows the 1985 Forest Plan benchmark level analysis for recreation (taken from page II-11 of the Final Environmental Impact Statement).

Maximum and Minimum Resource Output Levels Derived from the Benchmark Level Analysis			
Resource Output	Units	Maximum Quantity	Minimum Quantity
Dispersed capacity	MRVD	5,040	1,261
Developed capacity	MRVD	960	0
Winter Sports capacity	MRVD	49.6	0

DEMAND ASSESSMENT

The demand for dispersed recreation opportunities is very high, putting increased pressure on existing road and trail facilities. Some shifts in the types of recreation use have been observed. In the 1980's, motorized recreation increased as tent camping changed to motorized RV's and trailers. Campers and day users also started using larger vehicles including the use of additional vehicles and ATV's. Because of the shift in types of vehicles, types of activities and demographics, existing designs do not always meet the needs of current users. Our future population will generally be older and less agile, which will require designs to make recreation use more enjoyable. Examples of these changes could be trail grades that are not as steep, more rest benches and interpretative signs that have larger print.

Use of developed recreation facilities and exploring scenic byways and the recreational opportunities found along these corridors will continue to attract and draw visitors to the forest. It is anticipated the current growth will continue in the long term.

With two ski areas on the forest, there is sufficient capacity to meet skier demand over the next planning period. Even if skier demand should exceed the anticipated growth

rate, it can be accommodated with the potential expansion capability within the existing permit areas.

The following table summarizes recreation use on the forest in recreation visitor days, which is one person spending twelve hours in the activity or it may also be two persons spending six hours each. The percent does not equal 100 due to rounding.

Table 2-20. Recreation Use in 2000

Activity	Thousands of Recreation Visitor Days	Percent
Camping, picnicking and swimming	323.0	19.6
Mechanized travel & viewing scenery	482.5	29.3
Hiking & horseback, mtn. climbing	213.8	13.0
Resorts, Cabins, organization camps	260.1	15.8
Winter sports (downhill skiing)	8.7	0.5
Winter sports (cross country skiing)	31.2	1.9
Winter – snowmobiling	52.3	3.2
Winter - other	17.9	1.1
Hunting	52.9	3.2
Fishing	85.0	5.1
Nature study	16.4	1.0
Other activities	105.0	6.4
Total recreation visitor days	**1,648.8**	
Wilderness use (included in above)	70.1	4.6

The Bighorn National Forest is important to visitors as well as residents living in the four counties surrounding the Big Horns. The Bighorn Forest falls within four counties, ranging from less than five percent in Washakie County to almost 25 percent for Sheridan County.

In 2001, the University of Wyoming conducted a social assessment in the four counties surrounding the Bighorns to help understand how people are connected to the forest. Almost 19 out of every 20 respondents surveyed indicated they visited the Bighorn National Forest at least once during 2000 for the purpose of recreation.

Of those persons responding, the favorite activity to participate in was fishing. The top five favorite things were fishing, camping/picnicking, hunting, enjoying scenery and hiking/backpacking. When respondents had an opportunity to note all the recreation activities they participate in on the forest, wildlife viewing was listed by 78.4 percent of all responding, fishing by 64 percent and picnicking by 60.2 percent of all respondents.

Recreation use nationwide is projected to increase for all activities. Recreation use on the Bighorn National Forest is projected to continue in a slow, but steady growth as shown by decade in the following table.

Table 2-21: Projected Recreation Use

*1.1.1.1.1.1.1.4 Projected Recreation Use on the Bighorn National Forest (RVDs)**					
Years	2000 - 2010	2011 - 2020	2021 - 2030	2031 - 2040	2041 - 2050
Developed Recreation	507.0	543.9	584.0	627.4	674.5
Dispersed Recreation	1248.0	1339.0	1441.6	1557.5	1688.8
Downhill Skiing	8.8	8.9	8.9	9.0	9.1
Total Use	1763.8	1891.8	2034.5	2193.9	2372.4
** Numbers include wilderness use*					

The capability to manage the increased demand for traditional and nontraditional recreation opportunities and activities will be reflected in the management area allocations. The amount, location and user distribution will need to be monitored.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

Monitoring reports have shown the need to address issues and concerns related to recreation and travel management. The 1999 report including the following:

- Increased use of ATV's creates challenges for managing the recreation program for law enforcement, maintenance, user conflicts and road and trail damage
- Twenty percent of inventoried campsites were exhibiting conditions that would not meet forest plan standards
- Forest plan gives no assistance in setting priorities to fulfill recreational needs
- Continued moratorium on new outfitter/guide permits – need to complete a needs analysis

Dispersed recreation use and associated travel management are constrained by impacts on resources and the intolerance of one user group for another. Environmental education may help increase the potential to resolve the issues and concerns.

The Forest Plan needs to:

- Update the allocation of management areas and standards and guidelines to determine the mix, location and type of motorized and non-motorized recreation opportunities
- Provide updated standards and guidelines to address resource impacts occurring such as dispersed campsites
- Establish more consistent forest-wide direction to control motorized travel occurring off roads and trails

Chapter 2 – Major Revision Issues
Other Issues: Heritage Resources

The Medicine Wheel – a ceremonial rock structure used in Native American spiritual practices. Located on the northwest end of the forest, the site is a National Historic Landmark.

INTRODUCTION

Heritage resources[37] on all federal land are protected by a series of federal laws that were enacted to protect these resources from damage or loss due to federally funded or permitted activities. The public's recognition that these nonrenewable resources are important and should be protected began very early in this century and continues to the present.

LAWS, POLICIES AND DIRECTION

Antiquities Act of 1906

This act protects historic or prehistoric remains or any object of antiquity on federal lands and applies to both heritage and paleontological resources. It imposes criminal penalties for unauthorized destruction or appropriation of antiquities without a valid permit.

National Historic Preservation Act (NHPA) of 1966

This act protects historic and archaeological values during the planning and implementation of federal projects (CFR 36 800 and CFR 36 60). The law requires the location and identification of heritage resources during the planning phase of a project, a determination of "significance" (based on

[37] The term heritage resource and cultural resource are interchangeable

scientific archaeological values) for potentially affected resources, and provisions for mitigation of any significant sites that may be affected.

Archaeological Resources Protection Act (ARPA) of 1979

This act imposes civil penalties for the unauthorized excavation, removal, damage, alteration, or defacement of archaeological resources. This law applies to cultural resources.

Native American Grave Protection and Repatriation Act (NAGPRA) of 1990

American Indian burials and sacred items are protected by this act. It applies to cultural resources.

Federal Land Policy and Management Act of 1976 Section 102(8)

This act requires that "the public lands be managed in a manner that will protect the quality of scientific, scenic, historical, ecological, ...will preserve and protect certain public lands in their natural condition." This law applies to paleontological resources.

Uniform Rules and Regulations (16 U.S.C.G.. 432-433)

These regulations coincide with the Antiquities Act of 1906. They give the Secretary of Agriculture "jurisdiction over ruins, archaeological sites, historic and prehistoric monuments and structures, objects of antiquity, historic landmarks, and other objects of historic or scientific interests" on the National Forest System lands. This law applies to paleontological resources.

Code of Federal Regulations (CFR) 36 CFR 261.9

This regulation prohibits "excavating, damaging, or removing any vertebrate fossil or removing any paleontological resource for commercial purposes without a special-use authorization."

American Indian Religious Freedom (AIRF) Act of 1978

This act directs Federal Agencies to "… protect and preserve Native American religious cultural rights and practices." In some cases, the protection and management of a heritage property for traditional use is appropriate.

Executive Order 13007 of 1996

The Order directs Federal Agencies to establish a process that allows for access and use of cultural resources that are found to be important to the traditional lifeways of Native Americans.

HISTORICAL SUMMARY

Prehistoric Cultural Resources

The number of known prehistoric resources on the Bighorn National Forest is approximately 570. Of the 316 sites evaluated for potential inclusion in the National

Register of Historic places (NRHP), 97 have been found elegible by the Forest and the Wyoming State Historic Preservation Officer. The majority of these sites are open lithic scatters, open campsites, or small lithic quarries. Open lithic scatters are sites that have a visible surface component of flaked stone material and stone tools. Open campsites are essentially lithic scatters that have surface features such as hearths or stone circles and stone alignments. Lithic quarries are areas from which the raw lithic/stone material needed to make stone tools was acquired. During the process of acquiring the raw material from outcroppings, flakes and tools were produced. Of all the Prehistoric/Aboriginal sites located on the Forest, only the Windy Ridge Quartzite Quarry, with its associated sites, would qualify for inclusion on the NRHP.

The earliest evidence of human activity on the Forest comes from the Paleo-Indian period, which lasted from approximately 11,000 to 8,000 years before the present. Paleo-Indian people are thought to have been largely dependent upon big game hunting, especially during the end of the ice age when the large mammals, such as mammoth, wild horse, giant ground sloth and ancient bison, were still living. The cultural remains from the Paleo-Indian period can include open lithic scatters, quarries where the raw material for stone tools were gathered, kill/butcher sites, and campsites.

The Archaic period spans the time period from approximately 8,000 to 2,500 years before present. The first evidence of structures in Northwest Colorado are dated to this period. Cultural remains from the archaic period include base camps, open lithic scatters, stone quarries, and drivelines at high altitudes.

The Late Prehistoric culture added the bow and arrow to hunting tools, along with the limited use of ceramic vessels. Ceramic shards are not common, but a few pieces of utility ware have been located near Lynx Pass and near Harrison Creek. Wickiups, probably dating back 110 years, are further evidence of late occupation of the area. The Utes were the historic inhabitants of the area. Arapaho, Shoshone, Cheyenne, and possibly Kiowa utilized the mountains to a lesser extent until the 1700s. After 1810, the Ute and Arapaho competed over hunting territory. In 1879, the White River and Uncomphagre Ute bands were forcibly removed from their traditional lands onto the Uintah/Ouray Reservation in Utah.

Historic/Euro American Resources

Of the 149 historic sites recorded on the Forest, 56 have been evaluated as "potentially eligible" for the NRHP inclusion. The Euro-American cultural remains on the Forest are related to early farming and ranching, the timber and mineral industries, and early federal conservation practices. The majority of the historic sites are directly related to the historic economic development of the area.

Farming and Ranching - Small homesteads were patented on lands before the federal government set aside forested lands. Most of these homesteads remain as private property. Very few of the structures retain enough integrity to be eligible for the NRHP. Historic stock trails used to move sheep and cattle from Colorado into Wyoming are still in use and are now a part of the Forest's developed trail system These stock driveways are potentially eligible for inclusion on the NRHP.

Mining - Mining played an extremely important role in the early Euro-American settlement of northwest Colorado. Although most of the early

mines were patented and transferred into private ownership, some of the patents were transferred back to federal ownership. Cultural resources that relate to early mining can consist of the actual mines, debris from mining, or the small boomtowns that supported the mines. Evidence of mining and mineral test pits are located throughout the Forest. Many of these remains are not significant.

Timber - The timber resource on the Forest provided the majority of raw material used for construction of towns, ranches, and all buildings constructed by the Euro-American settlers. Remains of sawmills, logging roads, decking areas, tree stumps, and dwellings for loggers are found on the Forest. The vast majority of these sites are not significant, as they are badly deteriorated. The most significant of these sites are the Hog Park Tie Camp area, Ellis Trail, and the Sarvis Creek log flume.

Federal Conservation Practices - Federal conservation on the Forest began in 1905 with the establishment of the Park Range Forest Reserve. The sites, which are associated with the Early Federal Conservation period, are mostly buildings that were constructed for use by the Forest Service. The majority of these structures are still used as administrative sites. These sites are protected as administrative sites, but most lack a formal determination of eligibility for NRHP inclusion.

Paleontological Resources

The extent of paleontological deposits is unknown at this time. A complete inventory of the possible fossil-laden deposits has not been completed.

CURRENT CONDITIONS

Heritage resources are protected by the NHPA. Prior to any undertaking as defined in 36 CFR 800, all cultural resources are located and evaluated for their potential to be placed on the National Register of Historic Places. Those sites that are determined to be eligible are identified as "historic properties." The State Historic Preservation Office (SHPO) and Advisory Council on Historic Preservation must be informed of potential effects to any historic property. Agreement on mitigation of effects to all historic properties must be reached through consultation with SHPO and the Council before any project may take place.

The total extent of the cultural resource base is unknown, as only 8% of the Forest has been intensively surveyed. As of December 2000, cultural resource inventories have recorded a total of 930 individual cultural sites on the Forest, in compliance with NHPA Section 106. Until 1995, the majority of cultural resource inventories over a few acres were conducted for commercial timber sales. After 1995, the primary activity requiring cultural surveys was range allotment plans, though timber sales continued. Cultural resource inventories completed before

1980 are not adequate for project clearances, as defined in 36 CFR part 800, due to problems with survey intensity, research design, and methodology.

BENCHMARKS, DEMAND, DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

Benchmarks and demand are not applicable to this topic; there are no “outputs”. As for issues and concerns, heritage resources have largely been managed to meet the requirements of the laws and regulations. That is, when ground-disturbing activities are planned, appropriate surveys are conducted and mitigations applied or areas are avoided. The Medicine Wheel has been one obvious exception to this general rule. During revision there is an opportunity to map some of the more important heritage areas as Special Interest Management Areas, which would prioritize management of heritage resources in these areas.

Chapter 2 – Major Revision Issues
Other Issues: Livestock Grazing

Livestock grazing has been a permitted use of the Bighorn National Forest for over 100 years.

INTRODUCTION

Grassland, meadow, and riparian ecosystems occupy a good share of the Bighorn National Forest, and provide vegetation that supports numerous uses, including domestic livestock grazing. For the livestock producer, summer forage often represents a vital part of their total program. Term grazing permits for livestock grazing have been issued and are in effect through out much of the Bighorn National Forest. Most permitted livestock spend about three months out of the year on the Forest. Permit holders pay a grazing fee for use of forage each year. Through the permit system, permittees using the public's land have made an agreement with the Forest Service to use it in a certain way. Effects of livestock use on the environment are monitored, and adjustments made accordingly.

The 1985 Bighorn Forest Plan provides management guidance regarding livestock grazing at the broad, programmatic, forest-wide scale. Site-specific direction is addressed in Allotment Management Plans (AMP) specific to each allotment. Here, grazing use levels and strategies are to be designed to manage for a defined desired condition. The AMP is tiered to the Forest Plan.

LAWS, POLICY AND DIRECTION

Grazing and livestock use on the National Forest System (NFS) lands is authorized under the Code of Federal Regulations 36 CFR 222.1. Management of the range environment is directed in 36 CFR 222.2 and the direction for

issuance of grazing and livestock use permits is in 36 CFR 222.3. The Bighorn National Forest in 2001 permitted 119 individuals, partnerships or corporations to graze on the Forest. These individuals were authorized to graze by issuance of a Term, Private Land or Free Use Grazing Permit. Analysis of NFS lands as outlined in CFR 222.2 and 219.20 must be completed in the development of forest plans to determine lands suitable and the potential capability, in considering grazing management systems and the facilities to implement them.

HISTORICAL SUMMARY

The Forest Service has been managing rangelands for over 100 years, and has a long history of partnership with the livestock producers who rely upon National Forest System lands. Livestock have grazed in the Big Horn Mountains since the 1880's (Murray, 1980). In 1899 permits began to be required for grazing on the Reserve. That year 150,500 head of sheep were permitted to graze on the Reserve. In 1900 that number had increased to 224,450 head for a season of June 1 to September 20 (Conner, 1940). In 1900 Professor John G. Jack found the whole area (Bighorn Mountains) south of 13th Standard Parallel were badly overgrazed (Murray, 1980). He recommended that the number of sheep on the Reserve be restricted.

Through the years, the amount of grazing activity on the Forest fluctuated, sometimes significantly, due to market conditions and weather. By 1931 the amount of grazing on the Forest decreased to 32,352 head of cattle for a season of 3.5 months and 126,765 head of sheep for a 2.5-month season, or roughly 244,540 AUMs. [38]

The 1985 Bighorn National Forest Land and Resource Management Plan includes goals, objectives, standards, guidelines, management area direction and monitoring requirements for the rangeland resource. It addresses riparian management, range condition on upland sites, conflicts with other forest resources and uses, and support of the local livestock industry. It indicated that under the current situation (1985) sheep and cattle grazing on the Forest averaged 143,000 Animal Unit Months each year (page II-48). Projected annual outputs in the 1985 Forest Plan included objectives for the year 2000 to 2030 period that leveled out at 144,000 AUM's.

CURRENT CONDITIONS

The following table outlines livestock permitted on the Forest in 1985, and in 2001.

Bighorn National Forest Livestock Numbers

[38] An AUM is defined as the amount of forage required to sustain a 1,000-pound animal for one month, or 780 pounds of forage (air-dry weight). For purposes of displaying data, an animal unit factor of 1.32 is used to describe a permitted mature cow with calf, a factor of .7 is used to describe permitted yearling cattle, and a factor of 0.30 is used for a ewe with a lamb

	1985 Forest Plan	2001 INFRA data	
		Numbers Permitted [39]	Numbers Paid[40]
Cattle	33,000	29,229	27,297
Sheep	58,000	21,187	13,610
Horses	Not available	353	332
Permittees	Not available	119	
Total:			

An April, 2002 summary indicated that 118,396 AUMs were actually permitted on the Bighorn National Forest. This is 25,604 AUMs less than the 1985 Forest Plan objective, and represents a decline in permitted livestock levels on the Bighorn from 1985, as well as compared with permitted numbers from decades past.

The decline in permitted livestock is due to:

- Economic reasons
- Specific areas were simply overstocked relative to the intensity of management that could be applied
- Changes in vegetation and suitability over time (sagebrush and conifer encroachment)
- Conflict resolution with other resources and values

Uses and knowledge of Forest resources have increased significantly since 1985, and along with these increases have come increases in conflicts with livestock. Managers and permittees have become more aware of the pivotal role riparian plant communities play on forest ecosystems, and how livestock influence them. There have been continued efforts to improve range in "poor" or "fair" “range condition”, and grazing adjustments have been made to protect Forest Service sensitive species. There have been declines in transitory range as tree cover increases after timber sale activity or fires, and sub-marginal lands, which are not well suited for grazing, have not been restocked as allotments become vacant.

Economic factors related to livestock markets also affect permittee decisions regarding the stocking of permits. The sheep industry has experienced a decline throughout the country. Many high elevation areas are remote, short in production, high in fragility, unfenced, and have been found to be unsuitable for cattle. Some of these areas have been not been restocked by livestock when existing producers have discontinued their use.

Management strives to maintain permitted livestock grazing levels that ensure the long-term health and sustainability of the natural resources. Indications are that most grassland, meadow, and riparian ecosystems on the Bighorn National

[39] Permitted the animals permitted under a term, private land or free-use grazing permit.
[40] Paid is the animals actually paid for and grazed during that calendar year. The difference between permitted and paid would be considered Non-use and is approved annually by the District Ranger.

Forest are in far better condition than they were in 1900 when Professor Jack visited the area.

BENCHMARK ANALYSIS

The 1985 Forest Plan listed as objectives an annual output of 144,000 AUMs for the 2001–2010 time period, and 24,000 acres annual output of "*areas of grazing, recreation, and wildlife conflicts where conflicts are reduced*" in that same time period.

Monitoring has shown that the 1985 Forest Plan objective of 144,000 AUMs cannot be consistently supported while meeting the other Forest Plan goals and objectives. Indications are that although conflicts are often reduced between livestock grazing and other resources, they continue, and new conflicts also arise. Livestock grazing on the Forest has evolved to be based upon a desired condition, rather than an output of AUMs.

Livestock grazing remains a permitted and desired use of the Forest under multiple-use laws. Today, however, managers are increasingly challenged to provide grazing while maintaining wildlife habitat, watershed and vegetation values, recreation opportunities, and other uses.

DEMAND ASSESSMENT

Ranching is still an important component of the economic base of the communities surrounding the Forest. As long as this is the case, and it remains economical for producers to include Bighorn National Forest rangelands in their operations, a demand for livestock grazing in this area will continue.

DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

Resolution of concerns and the addressing of issues regarding rangeland management take place through application of site specific Allotment Management Plans, which are tiered to the Forest Plan.

The Forest Plan should identify land that is suitable and capable for grazing, which may help with future allocation decisions or with stocking decisions at the project level.

The Forest Plan includes goals, objectives, standards, and guidelines that are intended to direct management to reach a desired condition. A generally defined desired condition may be included in the Forest Plan, but may be further defined in Allotment Planning. The Forest Planning effort includes potential changes in the goals, objectives, standards, and guidelines, and subsequent monitoring would determine the success of these measures.

Chapter 2 – Major Revision Issues
Other Issues: Social and Economic Context

Located in Washakie County, Tensleep, Wyoming is one of the small rural communities that are affected by management and uses on the Bighorn National Forest.

INTRODUCTION

Social and economic analyses are conducted to determine what effect decisions made by the Forest Service will have upon local communities, and in order to better understand what types of demands and uses people will have upon the resources of the National Forest. People are an integral part of National Forest management, and human uses will be considered in how the Forest Plan will be revised. Throughout the revision, Big Horn, Johnson, Sheridan, and Washakie counties will be the primary analysis units.

To provide a human context for the natural resource information presented in the AMS, a brief summary of some social and economic information is provided. A more thorough social and economic existing condition assessment for the four Bighorn National Forest counties is online at: ww.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm. In cooperation with the State of Wyoming and the Big Horn Mountain Country Coalition, economic and social analysis for the Forest Plan revision will be provided by University of Wyoming faculty[41].

LAWS, POLICY, AND DIRECTION

The National Environmental Policy Act (1969) requires that natural and social sciences be integrated in all planning and decision-making that affect the human environment. The human environment includes the natural and physical environment and the relationship of people to that environment. Forest Service land management planning regulations (36 CFR 219) also requires that social science knowledge be considered in

[41] The social analysis will be provided by Dr. Audie Blevins and Dr. Katherine Jensen of the UW sociology department, and the economic analysis will be provided by Dr. David "Tex" Taylor and Dr. Roger Coupal of the UW Department of Agricultural and Applied Economics.

forest planning. The Forest Service has developed a handbook that provides basic principles, techniques and general guidance for assessing social effects.

COMMUNITY STABILITY

How Forest Plans envision interacting with local communities has changed in the 20 years since the first Forest Plans were written. The Bighorn Forest Plan includes the following goals:

- Provide livestock grazing that satisfies requirements for local community stability.
- Provide timber sale offerings that satisfy requirements for local community stability.
- Contribute to community economic and lifestyle stability.

Since the 1985 Plan, the following observations are apparent:

- The idea that our rural, western communities are economically and socially "stable" has been disproved over the past two decades:
- The Bighorn four county area has seen an energy boom, followed by a bust, and followed by another boom.
- Recreation demand has markedly increased, including different, unforeseen, types of recreation opportunities, such as All Terrain Vehicles.
- The booming "retiree" housing market is changing the face, demography, and population of our communities.

The point is that western communities have changed, and will continue to change, due to social and economic pressures that sometimes are, but more often are not, the result of changing federal land commodity outputs. Congress has recognized this in authorizing programs such as Rural Community Assistance Grants under the 1990 Farm Bill (www.fs.fed.us/r2/bighorn/visitorcenter/communitygrants/grantmenu.htm) in order to "…support grass roots community efforts to strengthen community leadership, mobilize people and resources, and build sustainable economies." Current thinking is that rather than attempt to maintain a unattainable goal of "stability", federal agencies and the Forest Service are more effective at assisting in the development of a communities adaptive capacity to change, grow and prosper in the face of inevitable social and economic change.

One example of the "stability" of resource, commodity outputs by the Bighorn NF has been the timber program. It has been anything but stable; going from an offer program of 15 to 18 million board feet in the early years of plan implementation, to an average of about two million board feet over the past six years. Despite that, Wyoming Sawmills, the primary local wood products company, has been able to stay in business because of expansion of harvest territory, developing and marketing new technologies and products, and innovative management. Our intent going into Forest Plan Revision must be to develop a range of alternatives that allows exploration of the various resource, social and economic tradeoffs associated with different harvest levels, and then be willing and legally able to offer the planned amount.

The report, "Wyoming Timber Market Analysis: The New Western Timber Economy", by Forest Economists Douglas Rideout and Hayley Hesseln of Colorado State University, cites key factors shaping the new timber economy and some potential implications. International events at work include increasing Canadian lumber imports, changing

monetary values, and increasingly robust Asian economies that may increase US lumber exports. Domestic events influencing the timber economy include reduction in public land timber offerings, and increased offerings of small diameter and privately owned timber. Some of the trends predicted include industry consolidation and difficulties for small volume, small business sawmills. This report provides an large-scale timber economy context in considering potential effects that different Bighorn NF timber offer levels could have upon lumber producers in the area.

Concerning livestock grazing stability, the Forest Plan includes an objective of permitting 144,000 Animal Unit Months (AUMs, the quantity of forage required by one mature cow for one month) currently. This compares to the actual permitted number of 118,503 AUMs. The Forest Plan revision will determine goals/objectives/and strategies, standards/guidelines, and monitoring items. Allotment management plans implement the Forest Plan goals/objectives/strategies, standards/guidelines and monitoring items on specific allotments. The allotment management plans, not the Forest Plan, are the documents that set the number of AUMs, on and off dates, pasture rotations, and make other site-specific livestock grazing decisions.

Public land grazing permits are essential to the viability of many of the grazing permittees in the four county area. The potential exists that without federal grazing permits, much of the land around the national forest could change ownership. Because of the price, some of those lands would likely be subdivided rather than stay in agricultural use. This has not only direct economic implications, but it would also affect the "open-space" quality of life considerations that most area residents prize.

Social Context

Table 2-22 shows the population of the four counties between 1890 and 2000. While Johnson and Sheridan counties have experienced population growth, Big Horn and Washakie counties have lost population since 1960.

Table 2-22. Population of Counties, 1890 to 2000
Source: US Census Bureau

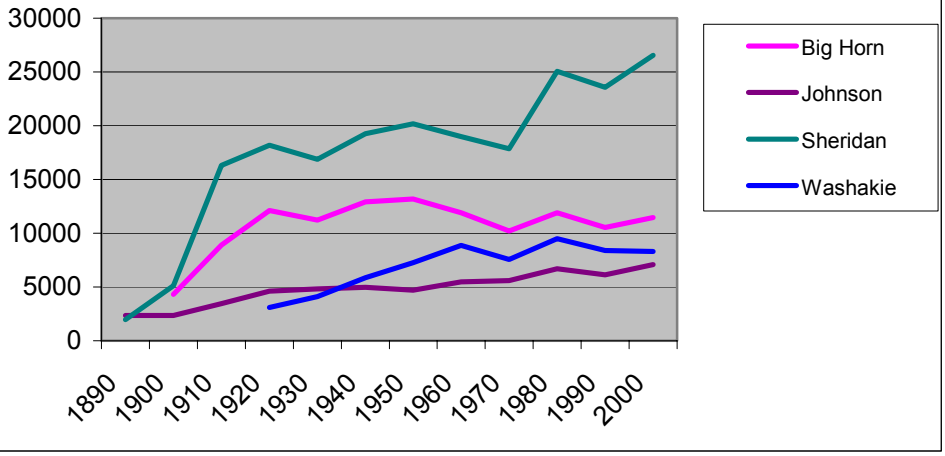


Table 2-23 compares the future population estimates made in the 1985 Forest Plan Final Environmental Impact Statement (FEIS) with the actual figures. The decade of the 1970's was one of robust growth in all four counties, and when that rate of increase was projected forward, it proved to be overly optimistic as far as the actual population increases.

Table 2-23. Comparison of Populations Projected in the 1985 FEIS to Actual Populations

Year	Big Horn[42]		Johnson		Sheridan		Washakie	
	Projected	*Actual*	*Projected*	*Actual*	*Projected*	*Actual*	*Projected*	*Actual*
1970	10,202	10,202	5588	5588	17,856	17,856	7567	7567
1980	11,896	11,896	6700	6700	25,048	25,048	9496	9496
1990	13,966	10,525	7425	6145	30,411	23,562	11,968	8388
2000	16,215	11,461	8154	7075	36,573	26,560	14,629	8289

Table 2-24 shows the landownership patterns in the four counties. Only about 6% of Big Horn county is in private ownership. In contrast, over 60% of Sheridan and Johnson counties are in private ownership.

Table 2-24. Percent of Area by Landownerhip

Source: 1998 Equality State Almanac

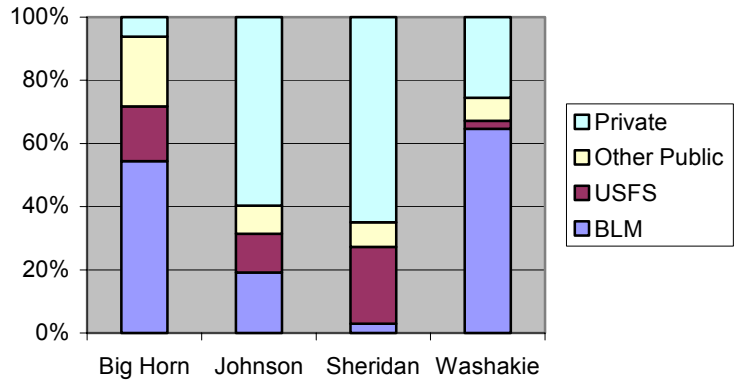
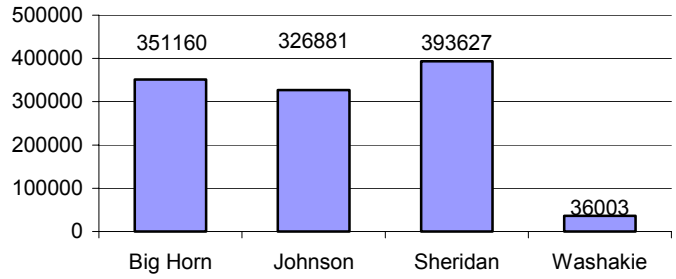


Table 2-25 shows how the Bighorn National Forest is divided by county.

Table 2-25. Bighorn National Forest Acres by County



[42] The FEIS included 40% of Park County to consider the effect of Powell, Wyoming. The figures shown in Table 2 are not the figures shown in the FEIS. For 1970 and 1980, they are the actual Big Horn County population; for 1990 and 2000 projections, they are the 1980 actual figure multiplied by the decadal rate of growth estimated in the FEIS.

Age demographics of the local population are important in considering what type of recreation demand might occur on the National Forest. Table 5 shows how Sheridan County's population by age group has changed between 1980 and 2000. The over-35 age groups have consistently increased in population, while the younger age groups, particularly the 20 to 34 age group, has decreased in population. These trends are consistent in the other three counties. One of the implications is that there are few young families in the four-county area. The cause is generally considered to be that the economic structure of the counties is not beneficial to young families; that is, there are few good paying, entry-level positions, particularly in comparison with other areas.

Table 2-26. Sheridan County Population by Age Groups
1980 - 2000

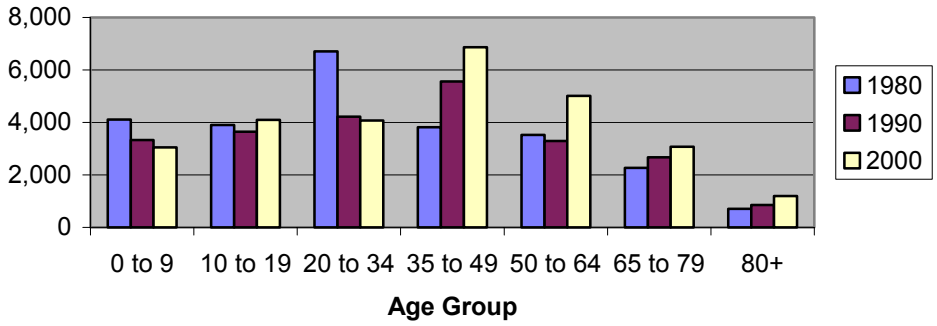
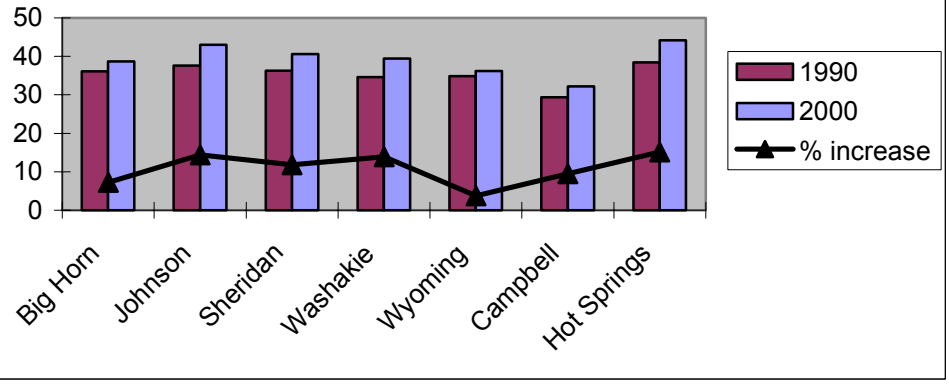


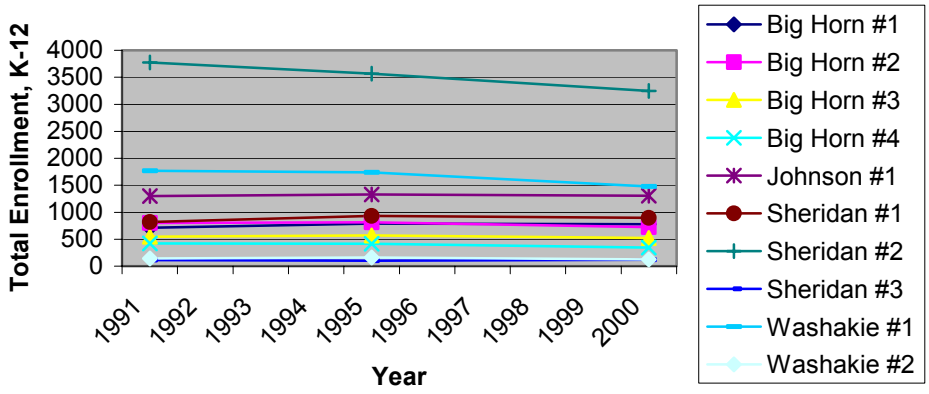
Table 2-27 shows that the median age of the counties is relatively old, compared to the United States and the rest of Wyoming, and that trend increased between 1990 and 2000.

Table 2-27. Median Age by County
1990 to 2000 trend



A final piece of information in the "future aging community" scenario is shown in Table 2-28, which identifies public school enrollment trends between 1991 and 2000 in the four county area. One of the items immediately apparent is the declining, or at best, flat, enrollment trends. This illustrates the fact that Wyoming is projected to be the only state with more high school graduates currently than are projected 20 years from now[43]. The other observation in this table are that the two lowest enrollment districts, Washakie #2 (Tensleep) and Sheridan #3 (Arvada-Clearmont) have been discussed as possible consolidation candidates in the last few legislative sessions dealing with school financing. A community's identity is usually strongly tied to its school, especially in rural, low population areas, and as the strong lobbying efforts put forth by these communities to save their schools demonstrated.

Table 2-28. Public School Enrollment in 4 County Big Horn Mountain Area, 1991, 1995, 2000
Source: Wyoming Department of Education



One part of the revision social assessment being conducted by the University of Wyoming is the mail survey. Approximately 2500 randomly selected households in the four county area received survey forms last winter, and there was about a 50% reply rate. Table 2-29 summarizes the responses to one of the items asked in the survey, which asked respondents to report negative, neutral, or positive effects from possible changes in Forest Service management. For example, people were asked if increased restrictions on grazing would negatively, positively, or not, affect them personally. Decreased summer motorized use is the most "polarized" issue, as the number of respondents positively and negatively affected both exceed the number of people not effected. This social assessment is completed. The data is for individual counties, as well as combined for the four counties is available online at: www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm.

[43] Information from Dr. Steven Maier, President of the North East Wyoming Community College District.

Table 2-29. Individual Perceived Effects from Various Potential Forest Plan *Revision*

Type of Management Decision	Negative Effect	No Effect	Positive Effect
Increased Restrictions on Grazing	21.8%	52.7%	25.5%
Decreased Winter Motorized Use	29.6%	46.5%	23.9%
Decreased Summer Motorized Use	42.0%	26.6%	31.4%
Decreased Logging	29.0%	50.1%	20.9%

Economic Context

As with the social context, this section will provide only a very cursory, brief overview of some of the important economic parameters that define the four county Bighorn National Forest areas. A very thorough economic existing condition assessment is available online, at www.fs.fed.us/r2/bighorn/planning/plan_revision/fw_assessments.htm.

Table 2-30 shows the employment by sector by county for 1999. The top four sectors in each county are bolded. The service, retail trade and government (shaded in grey) are the top three sectors in all four counties, although the relative rank varies by county.

Table 2-30. Employment by Economic Sector by County for 1999

Economic Sector	***Big Horn***		***Johnson***		***Sheridan***		***Washakie***	
	Jobs	***%***	***Jobs***	***%***	***Jobs***	***%***	***Jobs***	***%***
Service	**900**	**14.6%**	**1,047**	**22.2%**	**4,422**	**27.5%**	**1,325**	**24.2%**
Retail Trade	**790**	**12.8%**	**890**	**18.8%**	**3,164**	**19.7%**	**856**	**15.6%**
Government	**1,403**	**22.7%**	**794**	**16.8%**	**2,975**	**18.5%**	**834**	**15.2%**
Agriculture	609	9.9%	**473**	**10.0%**	761	4.7%	324	5.9%
Fin/Ins/REst[44]	265	4.3%	455	9.6%	**1,257**	**7.8%**	378	6.9%
Construction	375	6.1%	353	7.5%	1,229	7.6%	339	6.2%
Manufacturing	324	5.2%	169	3.6%	621	3.9%	**574**	**10.5%**
Ag Services	281	4.6%	155	3.3%	329	2.0%	118	2.2%
Tran/Pub Util	385	6.2%	155	3.3%	*796*	*5.0%*	350	6.4%
Mining	**672**	**10.9%**	130	2.8%	*80*	*0.5%*	263	4.8%
Wholesale	**672**	**10.9%**	101	2.1%	*438*	*2.7%*	125	2.3%

Source: U.S. Department of Commerce, REIS 1969-99, May 2001.

Table 2-31 shows which economic sectors created employment changes between1990 to 1999. For example, the mining sector accounted for 57.2% of the total employment growth in Big Horn County between 1990 and 1999. The three sectors that accounted for the most employment growth are bolded. The service and construction sectors were in the top three sectors in each county.

[44] *Fin/Ins/REst = Finanace, Insurance, Real Estate*

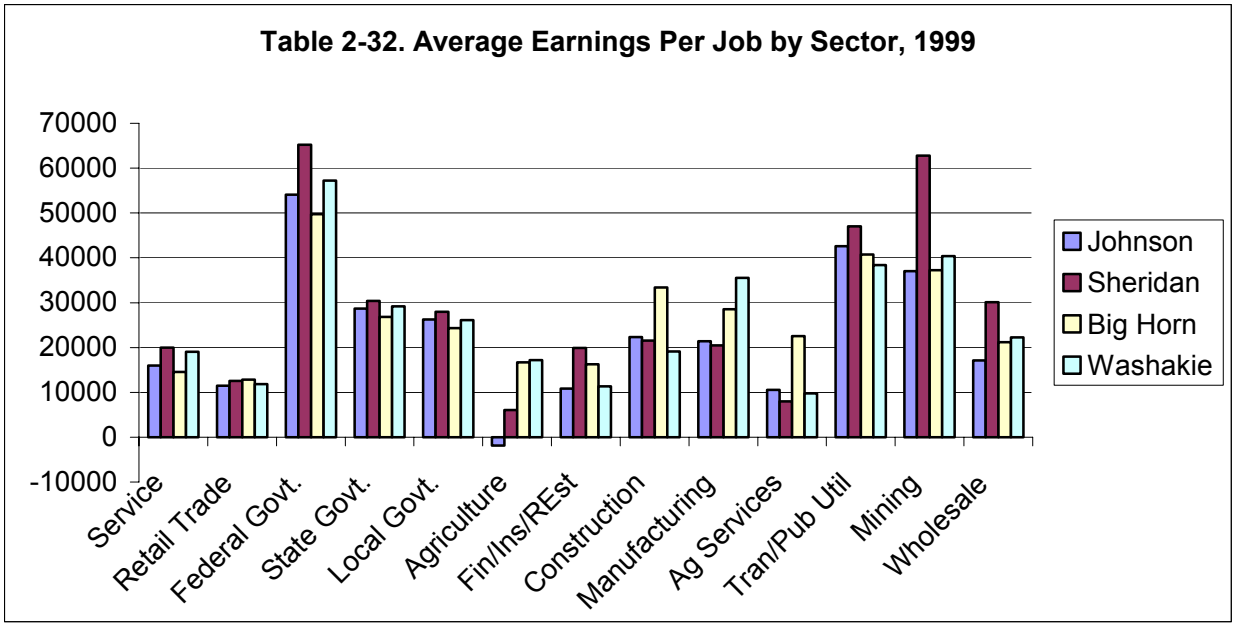
Table 2-31. Economic Sectors' Contribution to Employment Change, 1990 to 1999

Economic Sector	*Big Horn*	*Johnson*	*Sheridan*	*Washakie*
Service	***14.3%***	***40.2%***	***37.1%***	***58.7%***
Retail Trade	*8.8%*	*17.7%*	***22.6%***	***16.6%***
Government	*8.4%*	*4.2%*	*4.1%*	*-14.9%*
Agriculture	*-16.3%*	*1.4%*	*0.6%*	*-4.2%*
Fin/Ins/REst	*7.5%*	***22.4%***	*6.6%*	*9.7%*
Construction	***14.1%***	***18.2%***	***18.7%***	***14.1%***
Manufacturing	*-7.9%*	*7.1%*	*3.1%*	*11.2%*
Ag Services	*-1.0%*	*7.4%*	*4.1%*	*-0.9%*
Tran/Pub Util	*12.9%*	*-14.2%*	*1.3%*	*10.5%*
Mining	***57.2%***	*-10.3%*	*-1.4%*	*9.0%*
Wholesale	*1.9%*	*5.7%*	*3.2%*	*-9.9%*
	99.90%	*99.80%*	*100.00%*	*99.90%*

Source: U.S. Department of Commerce, REIS 1969-99, May 2001.

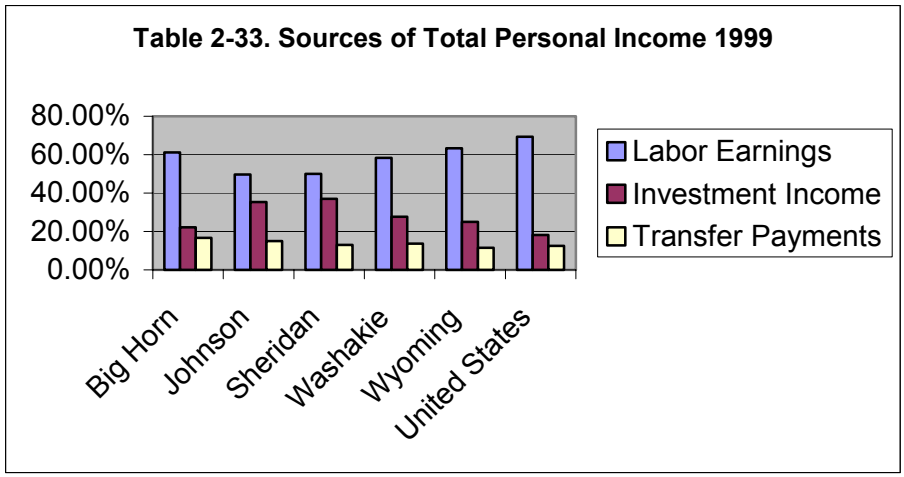
Table 2-32 shows the average earnings per job by economic sector for 1999. The federal government, mining, and transportation/public utility sectors are the three highest paying sectors. The agriculture sector's average earnings are distinctly different between the two sides of the mountain due to the different types of agriculture in the Powder River and Bighorn Basins. Sheridan and Johnson county agriculture is largely livestock grazing and hay production based, while Washakie and Big Horn counties are much more reliant upon irrigated crops, including sugar beets. The retail trade and service sectors, two large and fast growing segments of the local economies (Tables 2-30 and 2-31), offer relatively low average earnings.

Table 2-32. Average Earnings Per Job by Sector, 1999



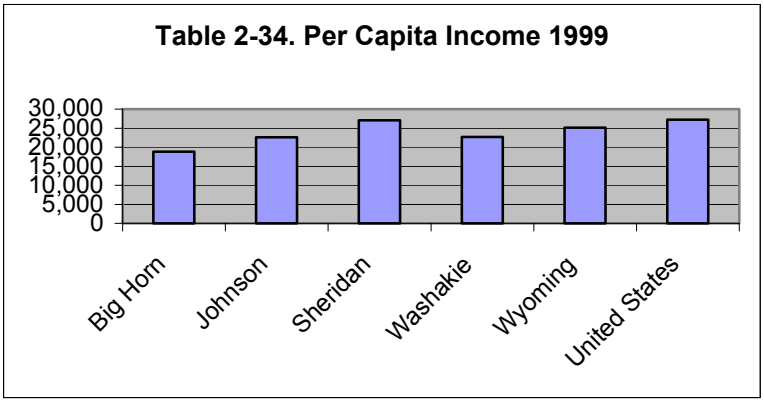
Source: U.S. Department of Commerce, REIS 1969-99, May 2001.

Table 2-33 shows the sources of total personal income for 1999. Investment income is dividends, interest, and rents that landlords receive and transfer payments are payments made by the government such as Medicare, Medicaid and social security. In Sheridan and Johnson counties, 50% and 50.3%, respectively, of the total personal income is from these two sources; labor earnings account for about 50%. Investment income and transfer payments are not generated by economic activity in the county.



Source: U.S. Department of Commerce, REIS 1969-99, May 2001.

Table 2-34 shows the per capita income for 1999 for the four counties.

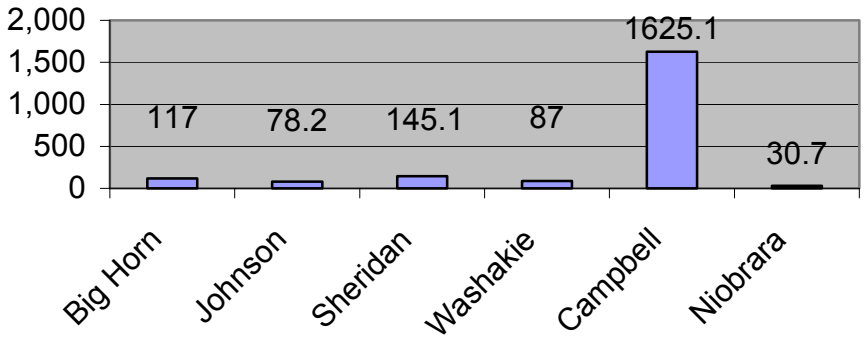


Source: U.S. Department of Commerce, REIS 1969-99, May 2001.

Table 2-35 shows the assessed valuation by county for 2000. Assessed valuation is important in understanding a county's capacity to adapt to change. That is, a county with a high assessed valuation, which is the amount that taxes can potentially be assessed against, has a larger tax base with which to fund programs. A county with a high valuation, such as Campbell County, has money available to fund such things as the Camplex, visitor's information bureaus, and economic relocation and recruiting services. As communities undergo inevitable economic and social changes, counties that are able to fund programs to ameliorate those changes will feel less social and economic stress. Campbell and Niobrara counties are included for comparison

purposes, as the counties with the highest and lowest, respectively, assessed valuations.

Table 2-35. Assessed Valuation by County, FY 2000



Source: 2000 Equality State Almanac

BENCHMARK ANALYSIS, DEMAND ASSESSMENT, AND DETERMINATION OF POTENTIAL TO RESOLVE ISSUES AND CONCERNS

The social and economic context and values are the “currency” used to describe other resources benchmarks, demands and resolutions.

Chapter 3 – Need for Change

36 CFR 219.11 (5), which is listed at the end of the section that describes the contents of the Analysis of the Management Situation (AMS), states:

> "Based on consideration of data and findings developed in paragraphs (e)(1)-(4), a determination of the need to establish or change management direction."

This section summarizes the need for change. This section supplements the requirement for revision at 36 CFR 219.10 (g), which states that Forest Plans shall ordinarily be revised on a 10-year cycle or at least every 15 years. This summary of the need for change is largely based on the document entitled "What is broken and needs fixed in revision" dated April 29, 2002.

BIOLOGICAL AND HABITAT DIVERSITY

- Species management and protection is out-of-date and not in compliance with recent court rulings on species viability implementation, especially for Management Indicator Species (MIS) and rare plants and animals.
- Some standards and guidelines are not achievable or measurable, e.g. "Habitat for each species on the forest will be maintained at least at 40% or more of potential".
- As cited earlier in the AMS, there is an opportunity to reassess the balance of resource management considerations, allocations, and outputs.

TIMBER SUITABILITY AND MANAGEMENT OF FORESTED LANDS

- Wildfire, fuels management and fire ecology goals, standards, and guidelines do not reflect the best science nor increased public awareness.
- The Allowable Sale Quantity is not in balance with standards and guidelines and other resource uses.
- Silviculture standards/guidelines do not match NFMA-based regional guidance in manual.
- Over half of the forested land designated as suitable for timber production under the 1985 Forest Plan is within roadless areas.

ROADLESS/WILDERNESS

- The roadless issue continues to be important to many members of the public.
- Roadless designation conflicts with other Forest Plan management objectives, such as areas of suited timber.

- The NFMA implementing regulations require that potential wilderness areas be considered during the revision process.

SPECIAL AREAS

- There is a need to consider additional Research Natural Areas for ecological baseline barometers.
- The Wild and Scenic Rivers Act requires that federal agencies shall evaluate the need and capability of providing additional wild, scenic and recreational rivers.

RECREATION AND TRAVEL MANAGEMENT

- There have been large increases in recreation use levels that are not accounted for under the current plan, especially with regard to riparian impacts.
- The current plan does not include allocations or standards to provide high quality scenery along the Scenic Byways.
- ATVs, for all intents and purposes, did not exist in 1985. Motorized use from cross-country travel is creating resource damage.

HERITAGE

- New laws have gone into effect since 1985 concerning heritage resources that are not reflected in the current forest plan.

RANGE

- The range goal to “manage riparian areas to reach mid to late seral ecological condition” is not always desirable.
- There are forest plan references to stocking rates, reference guides, ‘range conditions’, and dates that are not appropriate or are obsolete.
- The grazing objective of providing 144,000 AUMs is not in balance with standards and guidelines and other resource uses.
- Utilization standards other than those in the current forest plan, including vegetation left ungrazed, aspen, and streambank condition, are being used.
- The allotment management planning process has become an integral part of forest plan implementation.

GENERAL

- Some management areas too small. This creates areas that are difficult to manage; for example, a 40 acre 4B management area bisected by Pole Creek Road and within 7E/6B area.
- Some management areas are not being managed according to their prescription (e.g. 7E and suited emphasis in Little Goose, Piney and Rock Creeks; 9B water yield increase is not appropriately applied).
- New laws, amendments to existing laws, and implementation have come in place since 1985 that need incorporated (e.g. 1988 Cave Management Act; Clean Water Act implementation: Best Management Practices; Heritage law amendments)
- There is no distinction between standards and guidelines in the 1985 plan. This affects how projects are implemented and analysis required.
- The goals to "…satisfy requirements for local community stability…" is unrealistic for reasons described in the economic section of the AMS. Summarily, our communities are not stable, they change all the time; and, National Forest land management policies and decisions are typically a relatively small influence on the overall economy.

MONITORING

- Permittees are involved in range resource monitoring.
- Monitoring requirements for resources and programs do not address the objectives or reflect the current emphasis or needs for change.